

US EPA ARCHIVE DOCUMENT

**Draft**  
**Environmental Assessment (EA) for**  
**Regional Brineline Extension**  
**for the Yucaipa Valley Water District**

**November 2011**

**U.S. Environmental Protection Agency**  
**75 Hawthorne Street**  
**San Francisco, California 94105**



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## TABLE OF CONTENTS

	Page
<b>SECTION 1 PURPOSE AND NEED FOR ACTION .....</b>	<b>1-1</b>
1.1 Introduction.....	1-1
1.2 Legal Framework.....	1-2
1.3 Project Location.....	1-3
1.4 Purpose and Need for Proposed Action .....	1-4
1.5 Scope of Environmental Assessment.....	1-4
1.6 Regulatory Drivers and Guidance .....	1-4
<b>SECTION 2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES.....</b>	<b>2-1</b>
2.1 Alternatives Evaluated.....	2-1
2.2 Alternative 1 (Preferred Alternative): 14 Mile Brineline Extension and Reverse-Osmosis Facility .....	2-1
2.3 Alternative 2: No Action Alternative .....	2-5
2.4 Identification of the Preferred Alternative .....	2-5
<b>SECTION 3 AFFECTED ENVIRONMENT .....</b>	<b>3-1</b>
3.1 Air Quality .....	3-1
3.2 Noise .....	3-2
3.3 Odor.....	3-2
3.4 Water Resources.....	3-2
3.5 Wetlands.....	3-3
3.6 Floodplains .....	3-3
3.7 Public Health and Safety .....	3-3
3.8 Surface Resources .....	3-4
3.9 Vegetation and Wildlife.....	3-9
3.10 Threatened and Endangered Species.....	3-9
3.11 Cultural Resources and Historic Property .....	3-10
3.12 Land Use and Infrastructure .....	3-10
3.13 Aesthetics .....	3-13
3.14 Socioeconomics .....	3-13
3.15 Waste Management .....	3-13
3.16 Transportation .....	3-14
3.17 Energy .....	3-14
3.18 Environmental Justice and Protection of Children.....	3-14
<b>SECTION 4 ENVIRONMENTAL CONSEQUENCES .....</b>	<b>4-1</b>
4.1 Air Quality.....	4-1
4.2 Noise .....	4-3
4.3 Odor.....	4-4

**TABLE OF CONTENTS (Continued)**

	<b>Page</b>
4.4 Water Resources .....	4-5
4.5 Wetlands .....	4-6
4.6 Floodplains .....	4-8
4.7 Public Health and Safety .....	4-8
4.8 Surface Resources .....	4-9
4.9 Vegetation and Wildlife .....	4-11
4.10 Threatened and Endangered Species .....	4-13
4.11 Cultural Resources and Historic Property .....	4-16
4.12 Land Use and Infrastructure .....	4-17
4.13 Aesthetics .....	4-18
4.14 Socioeconomics .....	4-19
4.15 Waste Management .....	4-19
4.16 Transportation .....	4-19
4.17 Energy .....	4-21
4.18 Environmental Justice and Protection of Children .....	4-21
4.19 Cumulative Impacts .....	4-22
4.20 Selection of the Preferred Alternative .....	4-22
4.21 Unavoidable Adverse Impacts .....	4-25
4.22 Relationship of Short-Term and Long-Term Productivity .....	4-25
4.23 Irreversible and Irrecoverable Commitments of Resources .....	4-25
4.24 Conclusion .....	4-25
<b>SECTION 5 REFERENCES .....</b>	<b>5-1</b>
<b>SECTION 6 LIST OF PREPARERS .....</b>	<b>6-1</b>

## TABLE OF CONTENTS (Continued)

	<b>Page</b>
<b>List of Figures</b>	
1. Yucaipa Valley Water District Sphere of Influence.....	1-7
2. Santa Ana Regional Interceptor (SARI) .....	1-9
3. Regional Map .....	1-11
4. Vicinity Map.....	1-13
5. Proposed Action.....	1-15
5a. Proposed Action - Phase 1 .....	1-17
5b. Proposed Action - Phase 2 .....	1-19
5c. Proposed Action - Phase 3 .....	1-21
5d. Proposed Action - Phase 3 Directional Drilling .....	1-23
6. Proposed Reverse-Osmosis Facility at Existing Wochholz Regional Water Recycling Facility .....	2-3
7. 100-Year Floodplain.....	3-5
8. Alquist-Priolo Earthquake Fault Zone Boundaries .....	3-7
9. Suitable Burrowing Owl Habitat .....	3-11
<b>List of Tables</b>	
3-1. Federal de minimis Emission Levels.....	3-1
3-2. Creek Crossings.....	3-3
3-3. Population Totals and Percentages of Totals by Race for San Bernardino County, Riverside County, and the State of California .....	3-14
3-4. Population Totals and Percentages of Totals under Age 18 for the County of San Bernardino, Riverside County, and the State of California.....	3-15
4-1. Proposed Action Construction and Operation Emissions .....	4-1
4-2. Creek Crossings.....	4-7
4-3: Summary of Impacts for Fully Evaluated Resources .....	4-23
<b>List of Appendices</b>	
A Yucaipa Brineline Environmental Records Search	
B Biological Resources Letter Report	
C Cultural Records Search and Survey Results	
D Air Emissions Modeling Outputs	

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## SECTION 1 PURPOSE AND NEED FOR ACTION

### 1.1 Introduction

The Yucaipa Valley Water District (YVWD) is a special governmental district formed in 1971 and encompasses an area of approximately 50 square miles (see Figure 1). The District supplies water, wastewater, and recycled water services to the Cities of Yucaipa and Calimesa and unincorporated areas of Riverside and San Bernardino Counties. The District currently meets the water supply needs of its service area using a combination of local groundwater sources, surface water and imported water. Local groundwater is pumped primarily from the Yucaipa Management Zone Groundwater Basin and, to a lesser extent, the San Timoteo and Beaumont Management Zone Groundwater Basins. Potable water for customers in the District's service area is produced through filtration of raw (surface water and groundwater) and imported water at the District's Yucaipa Valley Regional Water Filtration Facility (YVRWFF). Wastewater collected from users in the District's service area is currently conveyed and treated at the Wochholz Regional Water Recycling Facility (WRWRF).

In 2006, the YVWD and the U.S. EPA prepared a joint *Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Regional Non-Potable Water Distribution System Project* (YVWD/U.S. EPA 2006), which contains a comprehensive disclosure and analysis of potential environmental effects associated with the implementation of the Regional Non-Potable Water Distribution System Project. The purpose of the project was to meet: 1) water quality objectives designated in the Water Quality Control Plan for the Santa Ana River Basin; 2) meet existing and planned non-potable (recycled) water demands; and 3) fulfill state mandates.

A total of approximately 153,100 linear feet of pipeline, three reservoirs and four pump stations were analyzed as part of the original EIR/EIS. The description of reservoir facilities at the Reservoir E-2 site has changed since adoption of the original EIR/EIS. While the EIR/EIS described the reservoir as a 2.0 million gallon recycled water reservoir, it has since been changed to two 1.0 million gallon recycled water reservoirs. The 2006 EIR/EIS identified the proposed single reservoir site on 1.5 acres. The existing proposal is to construct the two reservoirs on 4.5 acres. The U.S. EPA and the YVWD have determined that the impacts associated with the new footprint for the two reservoirs are similar to the impacts identified in the 2006 EIR/EIS for the single reservoir.

The proposed action under consideration within this EA is the District's Regional Brineline Extension Project. The major components of this project is the installation of 14 miles of pipeline from the WRWRF to the City of San Bernardino and the installation of a reverse-osmosis treatment system within the existing footprint of the WRWRF. The reverse-osmosis facility would be enclosed in a pre-manufactured building with a footprint measuring approximately 80 feet by 225 feet, and would not be more than approximately 25 feet high. The proposed action would not alter the capacity of existing water and wastewater services, and it is not anticipated to induce population growth.

#### ***Existing Santa Ana Regional Interceptor (SARI)***

The reverse-osmosis facility would extract waste brine and industrial wastewater from the wastewater conveyed from the WRWRF. The waste brine would be transported via the proposed Regional Brineline Extension Project where it will connect to the existing Santa Ana Regional Interceptor (SARI) line located in San Bernardino. Once the extracted brine and industrial wastewater is conveyed to the SARI system, additional treatment and disposal will occur. The existing SARI system transports non-reclaimable wastewater from Orange, Riverside and San Bernardino Counties to Orange County Sanitation District's (OCSD) Regional Treatment Plant No. 2 in Huntington Beach for additional treatment prior to discharge into the Pacific Ocean. The Santa Ana Watershed Project Authority (SAWPA) operates and manages capacity rights to the SARI system. The SARI system consists of over 90 miles of pipeline with the capacity to convey 30 million gallons per day (mgd) of non-reclaimable wastewater from the upper Santa Ana River basin to the ocean for disposal, after treatment (see Figure 2). Downstream treatment capacity is determined on a contractual basis, with OCSD currently providing up to 17 million gallons per day (mgd) of treatment and disposal with the option to increase capacity incrementally by 1 mgd up to 30 mgd. Although the SARI is fully subscribed with 30 mgd of pipeline capacity allocated to existing customers, the SARI pipeline currently conveys approximately 11.5 mgd of non-reclaimable wastewater and is not expected to operate at full capacity until approximately 2025.

The District currently owns 1.108 mgd of downstream capacity within the SARI system, but does not currently own treatment and disposal capacity within the OCSD system. The District has requested purchase of 0.5 mgd of pipeline capacity currently available from San Bernardino Valley Municipal Water District, and will also acquire sufficient treatment and disposal capacity prior to conveying waste brine into the SARI system. If necessary, the District could obtain additional pipeline capacity by negotiating contractual agreements for the transfer of excess capacity from existing users.

In 2009, the Yucaipa Valley Water District (YVWD) prepared a *Final Mitigated Negative Declaration (MND) for the Yucaipa Valley Regional Brineline Extension Project* (YVWD 2009), which contains a comprehensive disclosure and analysis of potential environmental effects associated with the implementation of the Regional Brineline Extension Project and the installation of the reverse-osmosis facility.

The United States Environmental Protection Agency (EPA) is considering providing Special Appropriation Grant funds to the YVWD for the Yucaipa Valley Regional Brineline Extension Project. The award of the Special Appropriation funds requires an evaluation of the proposed project to ensure compliance with the National Environmental Policy Act (NEPA).

## 1.2 Legal Framework

This EA was prepared using Council of Environmental Quality (CEQ) regulations 40 CFR Parts 1500-1508 and EPA regulations (40 CFR Part 6) as guidance. This EA documents the environmental consequences of the proposed federal action. Where appropriate this EA is based on information contained in the Final MND (YVWD 2009). The information contained in the MND is incorporated by reference into this EA.

### 1.3 Project Location

The District is proposing to connect to the existing SARI pipeline, which currently concludes at the City of San Bernardino wastewater treatment plant. As mentioned earlier, the District intends to utilize reverse-osmosis at the WRWRF to remove excess TDS and nitrogen (wastewater brine) from its water supplies. The proposed action includes approximately 14 miles of pipeline which would extend and connect to the existing SARI. The 14-mile pipeline extension will occur within the Cities of San Bernardino, Loma Linda, Redlands, and Yucaipa as well as unincorporated areas of San Bernardino County and Riverside County (see Figure 3 and Figure 4).

The proposed extension of the SARI would be located within developed areas in which the pipeline would be placed primarily within roadways (see Figure 5). The project has been broken into three phases of development, which are outlined below:

#### Phase 1 (see Figure 5a)

- Commencing at the WRWRF, the pipeline would be constructed within the existing District easement extending from the west end of the WRWRF approximately 3,300 feet to Live Oak Canyon Road.
- At Live Oak Canyon Road, the pipeline would continue approximately 18,800 feet to the intersection of Live Oak Canyon and San Timoteo Canyon Roads.

#### Phase 2 (see Figure 5b)

- Continuing west in San Timoteo Canyon Road, the pipeline would be constructed approximately 17,000 feet to the San Timoteo Creek crossing and then north to the south bank of the San Timoteo Creek where it would transition into the San Bernardino County Flood Control District (SBCFCD) service road.
- The pipeline would then continue west within the SBCFCD service roadway, along the southern boundary of San Timoteo Creek approximately 7,500 feet to the extension of the California Street right-of-way.

#### Phase 3 (see Figure 5c)

- At California Street, the pipeline would be constructed within the California Street right-of-way, traversing San Timoteo Creek, approximately 1,600 feet north to the intersection of California Street and Mission Road.
- The pipeline would continue northwest in the Mission Road right-of-way approximately 4,370 feet to its intersection with Van Leuven Street.
- Continuing west within the Van Leuven Street right-of-way, the pipeline would be constructed approximately 7,470 feet to Anderson Street, crossing Anderson Street into Loma Linda University owned property. The pipeline would continue west within the Loma Linda University property, and continue north along the western extent of that property parallel to the Gage Canal to the extension of East Caroline Street.

Approximately 4,000 feet of the pipeline would be constructed within easements from Loma Linda University.

- At East Caroline Street, the pipeline would be constructed west, under the Gage Canal, through an existing sewer easement, along East Caroline Street to South Club Way, approximately 3,550 feet.
- At South Club Way, the pipeline would be constructed north approximately 589 feet to Redlands Boulevard.
- At Redlands Boulevard, the pipeline would continue west approximately 1,070 feet to Hunts Lane, and then north in Hunts Lane approximately 540 feet, crossing under Interstate 10. The pipeline would continue north in Hunts Lane to the Santa Ana River.
- At the Santa Ana River, the pipeline would be constructed through trenchless methods under the river approximately 1,800 feet to the proposed SARI connection, located just south of the existing City of San Bernardino wastewater treatment plant along the northern boundary of the Santa Ana River.

#### **1.4 Purpose and Need for Proposed Action**

The District's service area lies within the upper watershed of the Santa Ana River where stringent water quality objectives have been adopted by the Santa Ana Regional Water Quality Control Board (RWQCB) to protect downstream beneficial uses. As a result, the District in some cases will be restricted from the use of recycled water that exceeds water quality objectives for Total Dissolved Solids (TDS) and nitrogen. In order to comply with water quality objectives and to achieve advanced fresh water as a renewable resource, the District intends to utilize reverse-osmosis at the WRWRF to remove excess TDS and nitrogen from its water supplies.

A byproduct of reverse-osmosis is waste brine, comprised of highly concentrated minerals and salts, which must be disposed of in order to protect basin water quality and comply with basin water quality objectives set by RWQCB. In order to provide disposal of waste brine and excess non-reclaimable wastewater, the District is proposing to extend the existing Santa Ana Regional Interceptor (SARI) pipeline into the Yucaipa Valley. This is referred to as the District's Yucaipa Valley Regional Brineline Extension Project (proposed action), and will allow waste brine and excess non-reclaimable wastewater to be conveyed directly to the Orange County Sanitation District's (OCSD) treatment plant for treatment and eventual disposal into the Pacific Ocean.

#### **1.5 Scope of Environmental Assessment**

The purpose of this EA is to document and make public the potential direct, indirect, and cumulative environmental impacts that may arise from the implementation of the proposed action and the no action alternative for the proposed brineline extension.

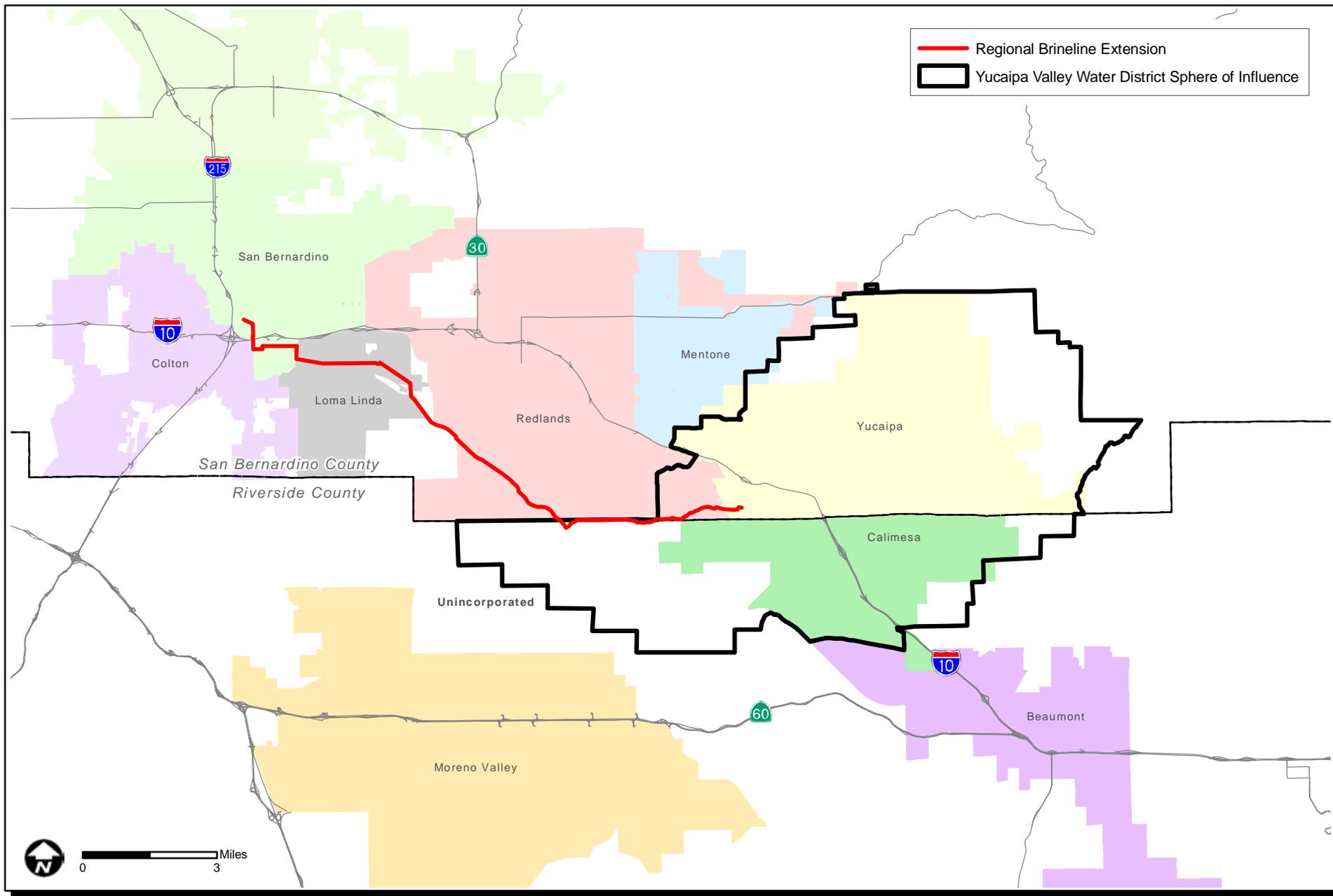
#### **1.6 Regulatory Drivers and Guidance**

The U.S. Government and the State of California have regulations to protect the environment and improve environmental quality. Please see the *Final Mitigated Negative Declaration (MND)*

for the Yucaipa Valley Regional Brineline Extension Project (YVWD 2009) for the laws and regulations as they apply to the proposed action.

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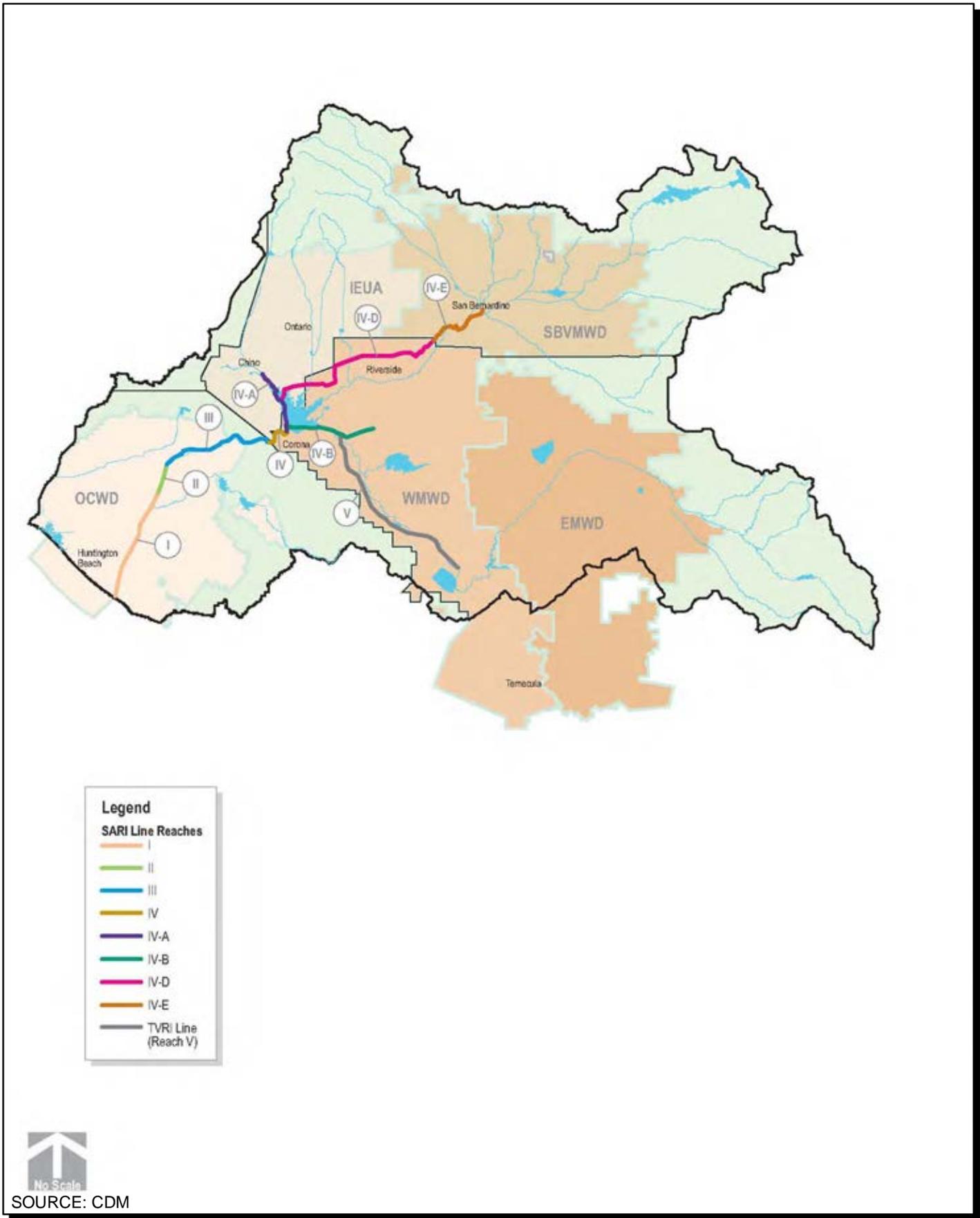
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Yucaipa Valley Regional Brineline Extension Project - EA  
Yucaipa Valley Water District (YVWD) Sphere of Influence

FIGURE  
1

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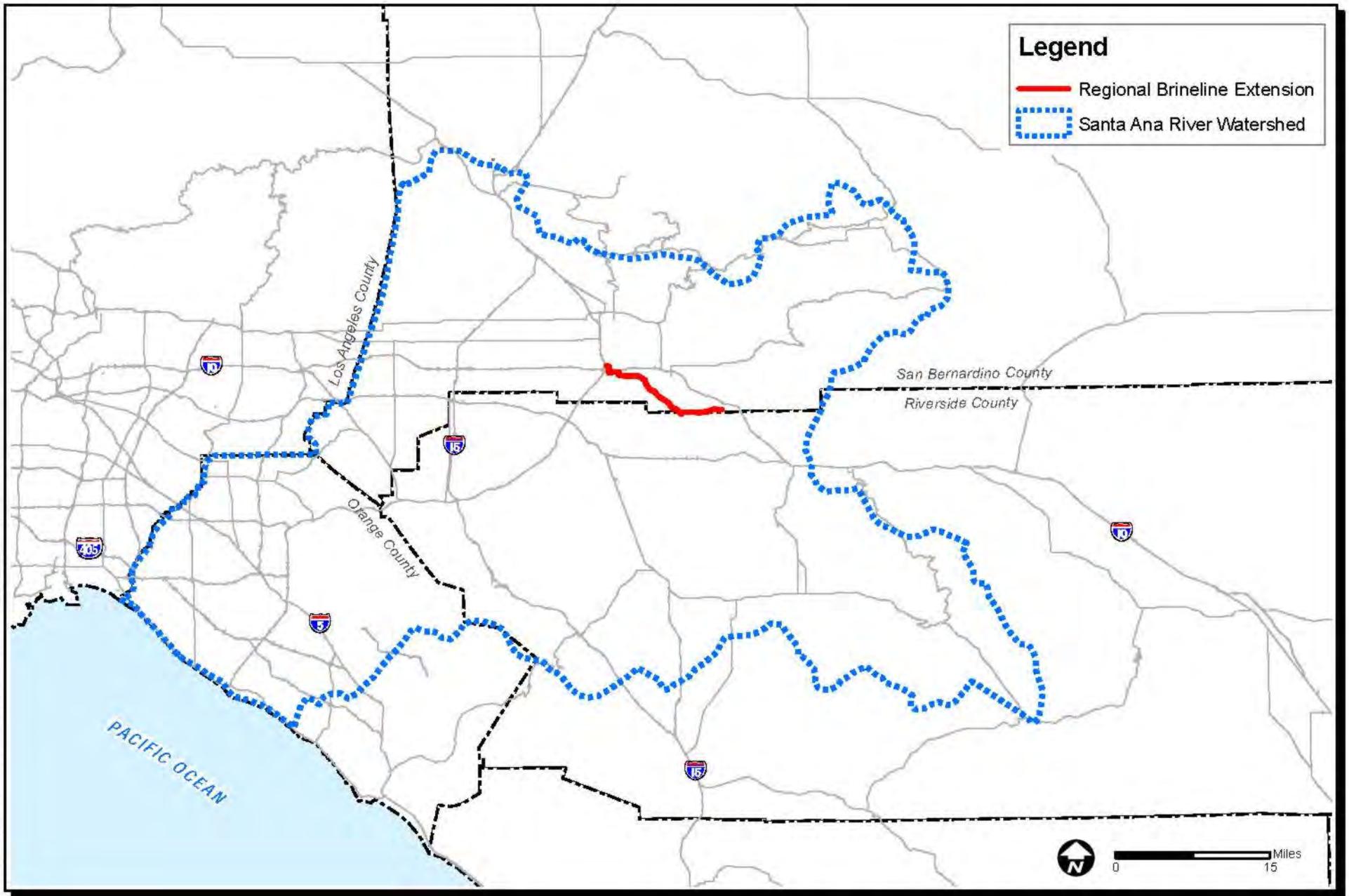
Yucaipa Valley Regional Brineline Extension Project - EA  
**Santa Ana Regional Interceptor (SARI)**

FIGURE  
2

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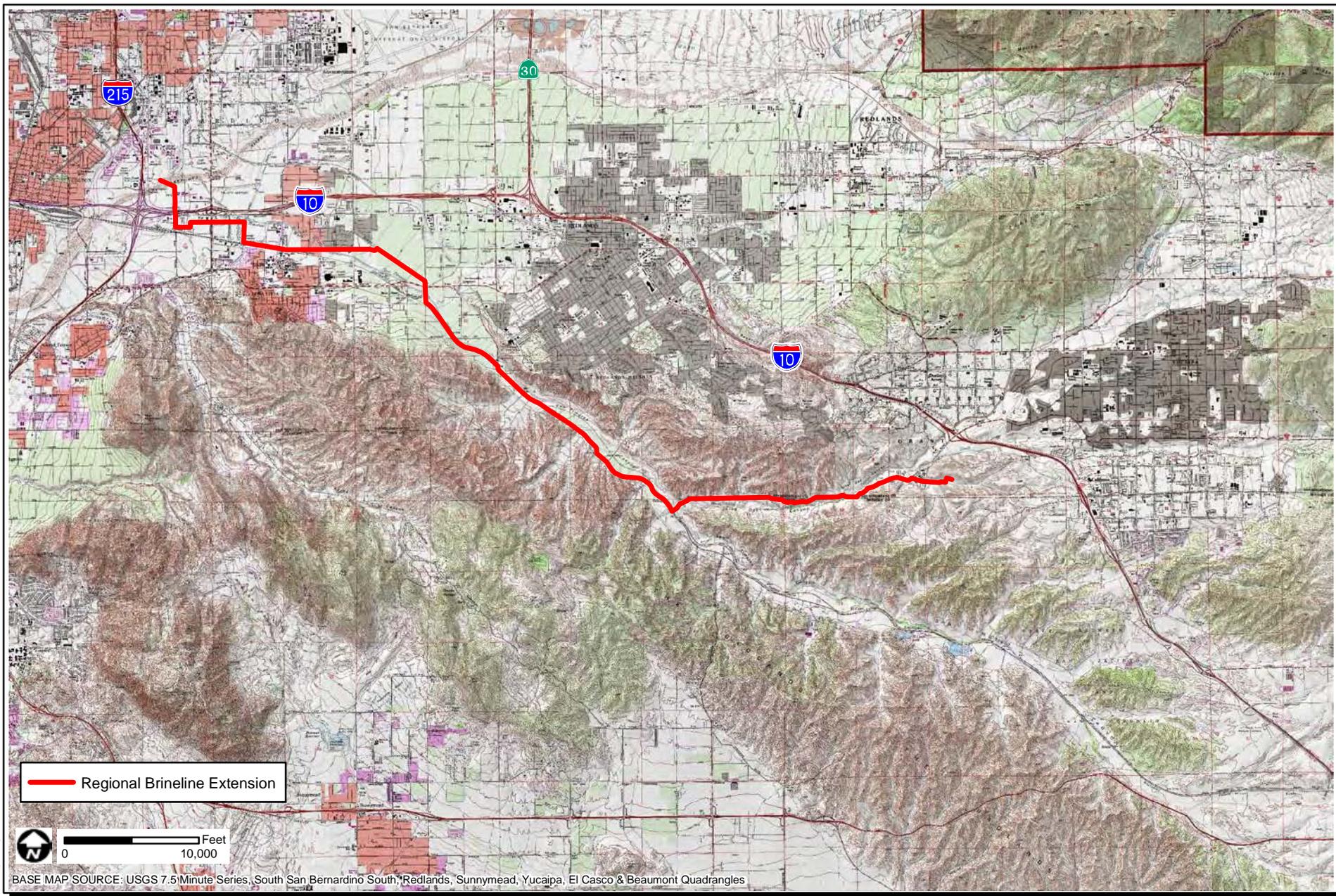


Yucaipa Valley Regional Brineline Extension Project - EA  
**Regional Map**

**FIGURE  
3**

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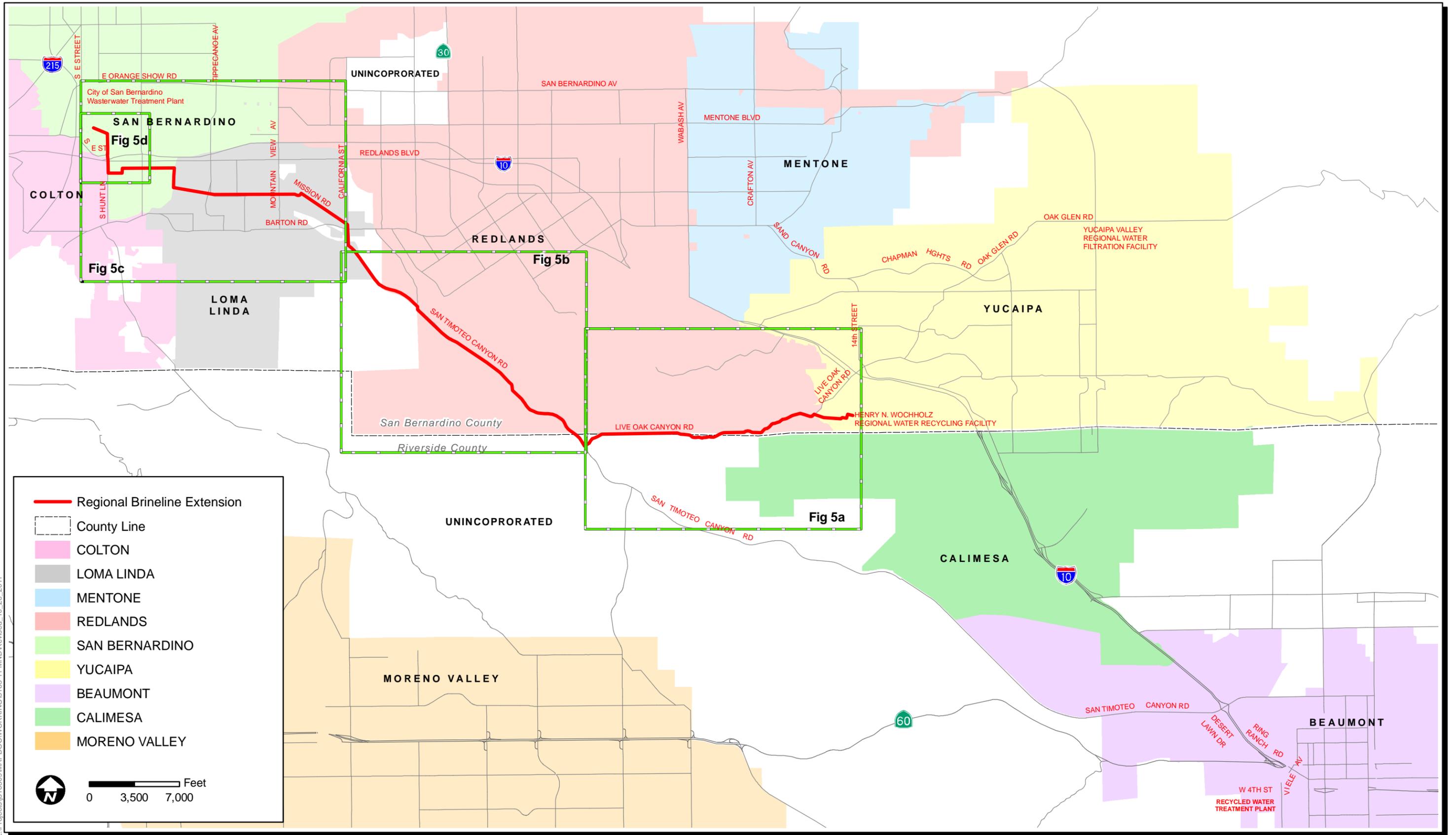


Yucaipa Valley Regional Brineline Extension Project - EA  
Vicinity Map

FIGURE  
4

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Yucaipa Valley Regional Brineline Extension Project - EA Proposed Action

FIGURE 5

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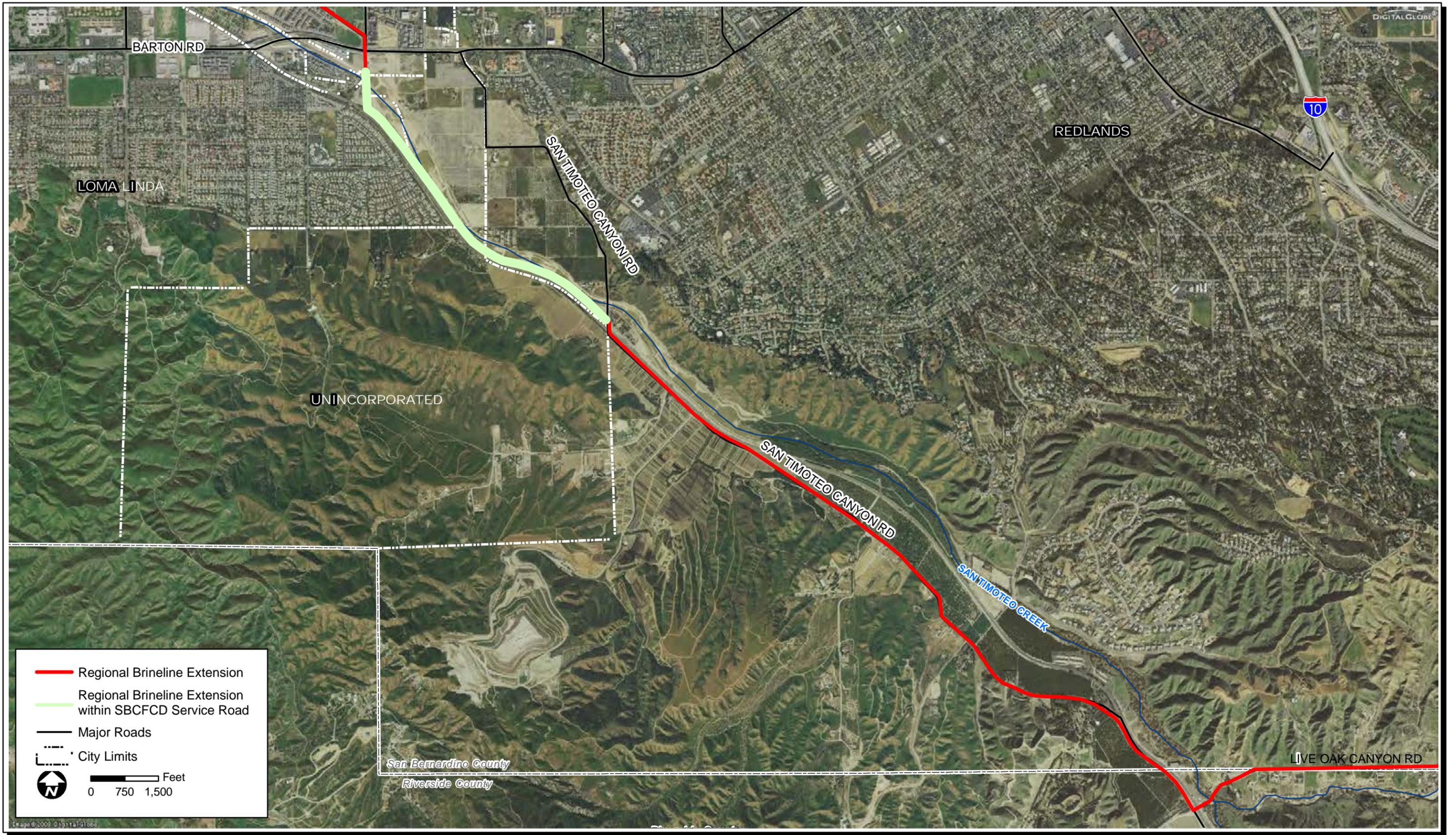


Yucaipa Valley Regional Brineline Extension Project - EA  
Proposed Action - Phase 1

FIGURE  
5a

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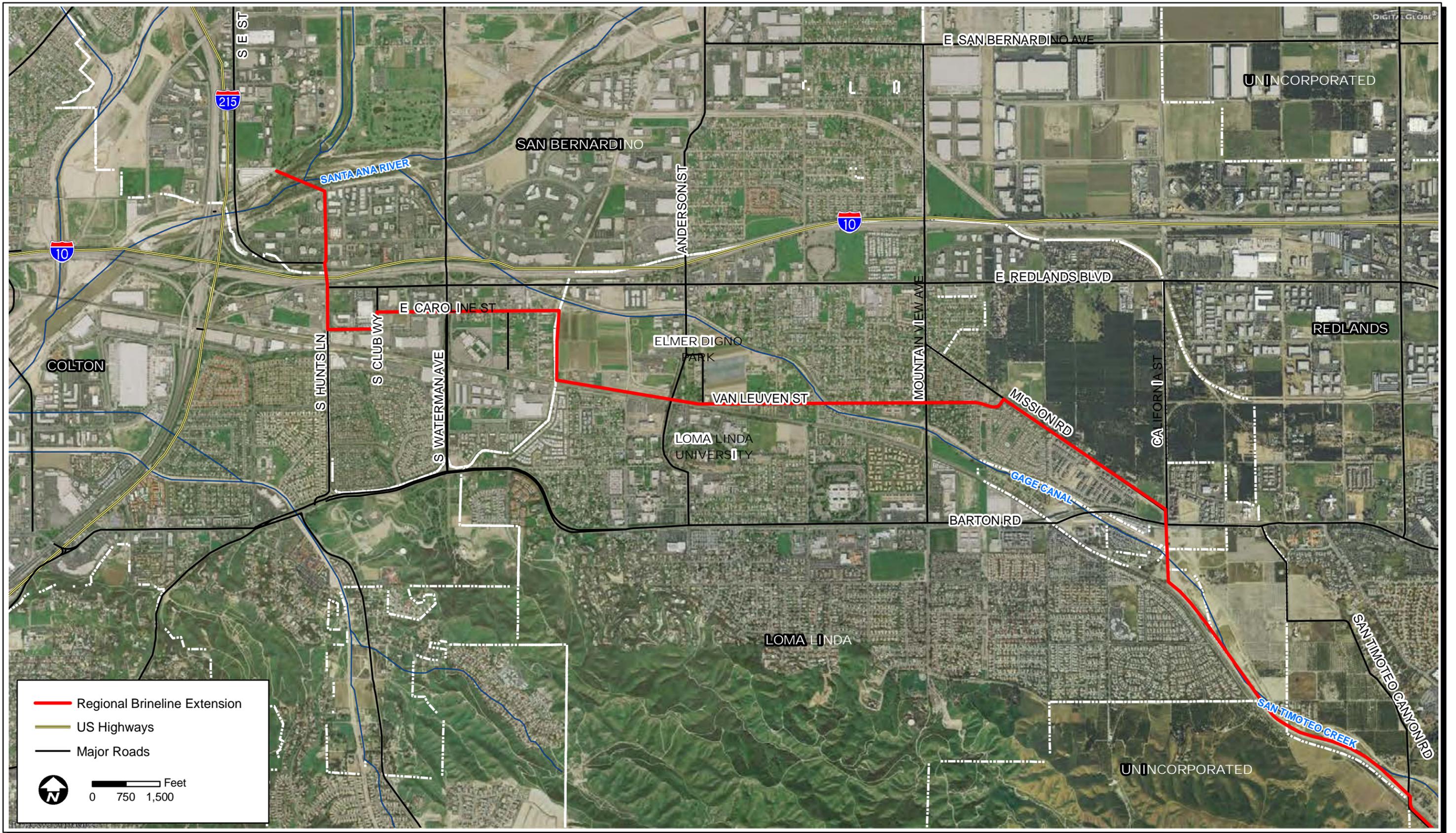


Yucaipa Valley Regional Brineline Extension Project - EA  
Proposed Action - Phase 2

FIGURE  
5b

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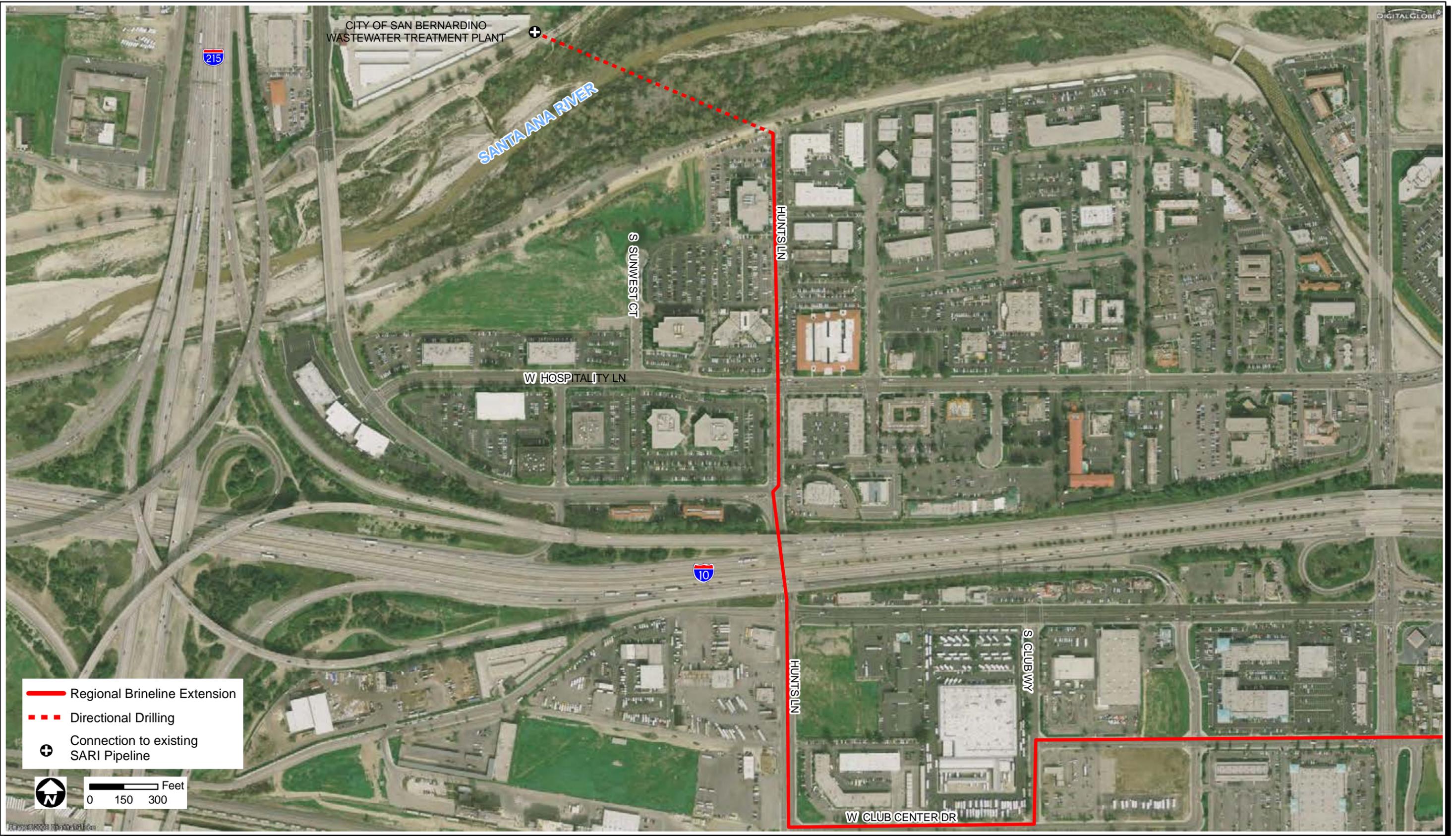
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Yucaipa Valley Regional Brineline Extension Project - EA  
Proposed Action - Phase 3

FIGURE  
5c

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Yucaipa Valley Regional Brine Line Extension Project - EA Proposed Action - Phase 3 Directional Drilling

FIGURE 5d

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## **SECTION 2**

### **DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES**

#### **2.1 Alternatives Evaluated**

Due to the limited scope and purpose of this project, two alternatives are being considered in this EA:

- 1) Alternative 1, the Preferred Alternative, would involve the extension of the existing SARI pipeline by approximately 14 miles from the City of San Bernardino to the WRWRF in the City of Yucaipa and the construction and operation of a reverse-osmosis treatment system within the existing developed footprint of the WRWRF. Construction and operation of the Preferred Alternative would allow waste brine and excess non-reclaimable wastewater to be conveyed directly to the Orange County Sanitation District's (OCSD) treatment plant for treatment.
- 2) Under the No Action Alternative, the proposed brineline extension and reverse-osmosis facility would not be built, and thus would not allow waste brine and excess non-reclaimable wastewater to be conveyed directly to the Orange County Sanitation District's (OCSD) treatment plant for treatment.

#### **2.2 Alternative 1 (Preferred Alternative): 14 Mile Brineline Extension and Reverse-Osmosis Facility**

The Preferred Alternative (Alternative 1), hereafter referred to as “proposed action”, would involve extending the existing SARI pipeline by approximately 14 miles (74,000 linear feet), primarily using a 12-inch gravity pipeline with pressurized segments as needed. The pipeline would be constructed of High Density Polyethylene (HDPE) and manholes would be spaced along the pipeline as appropriate.

The final design is based on the assumption of a YVWD-only project for Phase 1, resulting in a 12-inch pipe size. To allow other regional dischargers to join the project, the Phase 2 pipeline would be designed to a 16-inch pipeline and the Phase 3 pipeline may be upsized to a 20-inch pipeline.

The proposed action would install a reverse-osmosis treatment system within the existing developed footprint of the WRWRF (see Figure 6). The reverse-osmosis facility would be enclosed in a pre-manufactured building with a footprint measuring approximately 80 feet by 225 feet, and would not be more than approximately 25 feet high. The proposed reverse-osmosis system would consist of feeder pumps, cartridge filters, pressure vessel racks, membrane pressure vessels, membrane elements, an interstage booster pump, piping, valves, and instrumentation. Collectively these components make up a reverse-osmosis train.

The design of the reverse-osmosis facility would incorporate the addition of a threshold inhibitor prior to the reverse-osmosis membrane unit. Threshold inhibitors are a family of proprietary chemicals (generally polyacrylates) that can be applied to delay the precipitation of sparingly soluble salts within the membrane unit that would plug the feed passages of the membrane. These chemicals are typically applied at a dosage of 1 to 3 mg/L prior to the membrane unit.

Other chemicals required to maintain operation of the reverse-osmosis facility include sulfuric acid, chlorine, ammonia, and lime.

The intent of the proposed action is to provide adequate disposal of waste brine and excess non-reclaimable wastewater while improve water quality through reverse-osmosis at the WRWRF to remove excess TDS and nitrogen from its water supplies. The waste brine from the WRWRF would be transported via the proposed pipeline extension and connect to the existing SARI line. The entire pipeline extension would be constructed within existing roadways, and all construction work, staging areas, and access routes would be confined to existing paved right-of-ways (ROWs). See Section 1.3: *Project Location* for pipeline alignment locations.

Once constructed and installed, the proposed action facilities and infrastructure would operate 24 hours per day and would be maintained by the YVWD. District staff would monitor the facility on a regular basis as part of normal maintenance operations.

Construction of the proposed action is anticipated to occur over a period of one year. A total of 20 workers would be employed at any given time during construction. The use of a drill rig, delivery trucks, dump trucks, a crane loader, backhoe, an engine-driven hydraulics pump, an engine-driven generator, and soil classifier equipment would be necessary for project construction. All construction work, staging areas, and improvements would be located within the existing rights-of-way.

#### Special Construction Methods

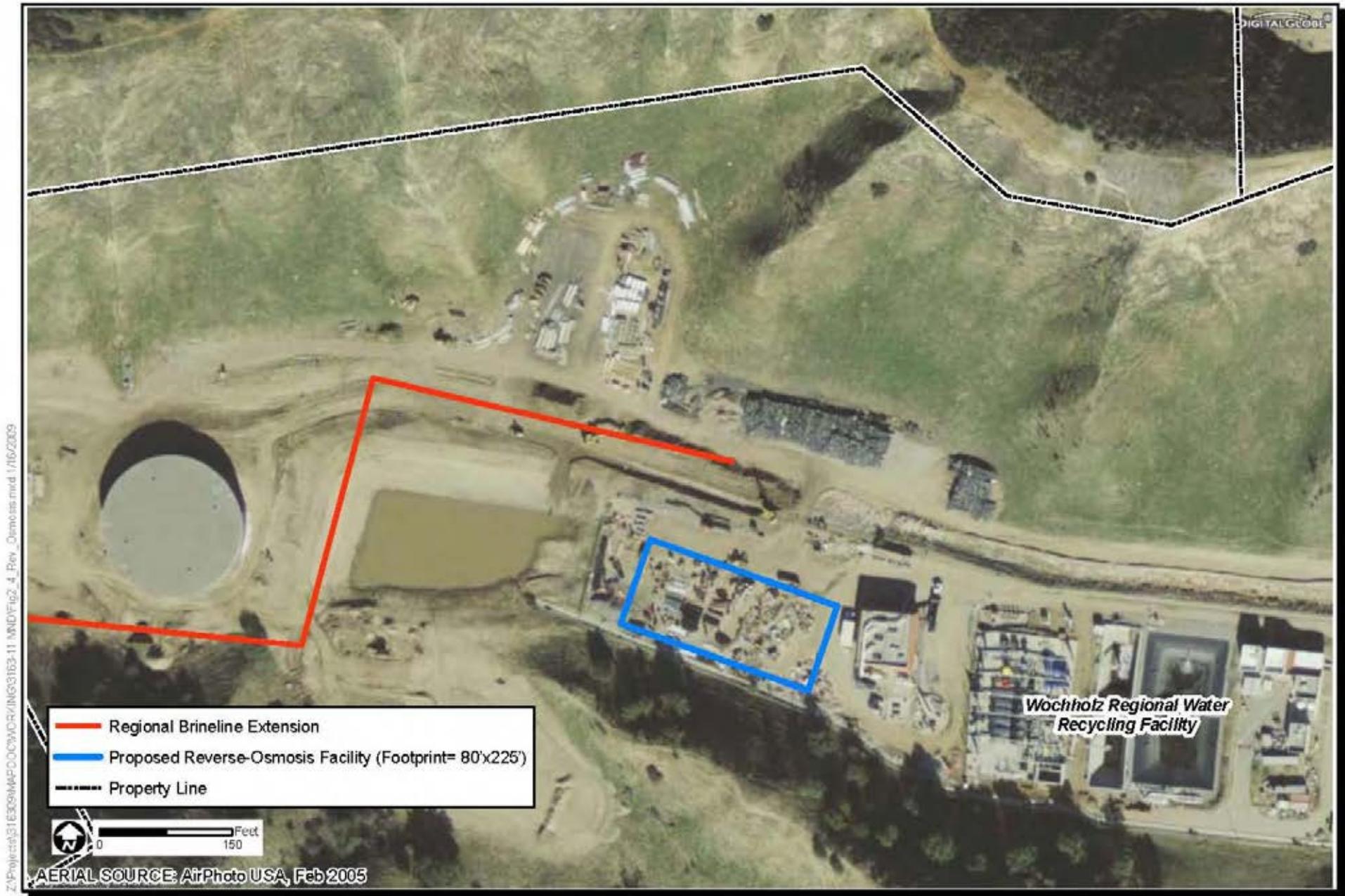
The proposed action would primarily be installed using conventional trenching methods. Trenchless construction methods including directional drilling or jack and bore would be used where conventional trenching is not feasible (i.e., railroad and highway crossings), or where trenchless construction is necessary to avoid significant impacts to biological resources (i.e., creek crossings). At existing bridge crossings, pipelines would be hung directly from the bridge if feasible. All construction activities would occur within a temporary 30-foot wide construction corridor along the proposed alignment. In addition, temporary staging areas required during construction for equipment and materials storage or at entry and exit points during trenchless construction activities would be located within the 30-foot wide construction corridor. Staging areas to be utilized during directional drilling at the Santa Ana River are identified on Figure 5d.

Given that the proposed action is located within several jurisdictions; all construction would comply with the following (unless otherwise approved by the respective jurisdictions):

City of San Bernardino – All construction would occur Monday through Friday, 7:00 AM to 7:00 PM except Sundays and Federal Holidays in accordance with the San Bernardino County Municipal Code Chapter.

City of Loma Linda – All construction would occur Monday through Friday 7:00 AM to 8:00 PM except on weekends or national holidays in accordance with the City of Loma Linda Municipal Code Chapter.

City of Redlands – All construction would occur Monday through Friday, 7:00 AM to 6:00 PM except Sundays and Federal Holidays in accordance with the City of Redlands Municipal Code Chapter.



Yucaipa Valley Regional Brineline Extension Project - EA  
**Proposed Reverse-Osmosis Facility at Existing Wochholz Regional Water Recycling Facility**

FIGURE  
**6**

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City of Yucaipa – All construction would occur Monday through Friday, 7:00 AM to 7 PM except Sundays and Federal Holidays in accordance with the City of Yucaipa Municipal Code Chapter.

County of San Bernardino – All construction would occur Monday through Friday, 7:00 AM to 7:00 PM except Sundays and Federal Holidays in accordance with the San Bernardino County Municipal Code Chapter.

County of Riverside – Construction would not occur between the hours of 6:00 PM and 6:00 AM during the months of June through September and would not occur between the hours of 6:00 PM and 7:00 AM during the months of October through May in accordance with the County of Riverside Municipal Code Chapter.

### **2.3 Alternative 2: No Action Alternative**

Under the No Action Alternative, the proposed action would not be implemented, the brineline extension and reverse-osmosis facility would not be built, and would not allow waste brine and excess non-reclaimable wastewater to be conveyed directly to the Orange County Sanitation District's (OCSD) treatment plant for treatment. There would be no capital outlay required to install the pipeline and no impacts to the proposed pipeline route.

### **2.4 Identification of the Preferred Alternative**

Alternative 1 was selected as the Preferred Alternative based on its effectiveness and limited environmental impacts with mitigation implemented. Although this EA determined that Alternative 1 had a greater number of potential environmental impacts than the no project alternative, with implementation of proper mitigation measures, all impacts would be reduced to less than significant levels.

Furthermore, as previously discussed, utilization of reverse-osmosis at the WRWRF would effectively remove excess total dissolved solids and nitrogen from the water supply; thereby improving water quality and ensuring compliance with Santa Ana RWQCB water quality objectives. Additionally, this process would allow the District to use advanced fresh water as a renewable resource. The project would subsequently provide conveyance and disposal of the highly concentrated minerals and salts (waste brine) resulting from the reverse-osmosis process. Proper conveyance, treatment and disposal of waste brine would protect basin water quality and comply with basin water quality objectives set by RWQCB prior to ultimate disposal into the Pacific Ocean.

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## SECTION 3 AFFECTED ENVIRONMENT

### 3.1 Air Quality

Air quality is affected by stationary sources (e.g., industrial development) and mobile sources (e.g., motor vehicles and construction equipment). Primary factors affecting pollutant dispersion are wind speed and direction, atmospheric stability, temperature, the presence or absence of inversions, and topography. The federal Clean Air Act (CAA) and Amendments regulate air quality standards under the jurisdiction of USEPA. USEPA establishes National Ambient Air Quality Standards (NAAQS) which represent maximum levels of background air pollution that are considered safe, with an adequate margin of safety, to protect public health and welfare on individual states. NAAQS are established for criteria pollutants, including: ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter equal to or less than 10 microns in diameter (PM<sub>10</sub>) and 2.5 microns in diameter (PM<sub>2.5</sub>), and lead (Pb). USEPA requires each state to prepare a State Implementation Plan (SIP) that includes goals, strategies, schedules, and enforcement actions that will lead the state into compliance with all NAAQS. Under the SIP there are several air basins that are responsible for implementing more specific plans for attainment of the NAAQS within their geographic regions. Areas not in compliance with the standards can be declared non-attainment areas by USEPA or the appropriate state or local agency. Table 3-1 shows federal air quality thresholds according to the Code of Federal Regulations (CFR), Title 40, Volume 20, Part 93.

**Table 3-1. Federal de minimis Emission Levels**

Pollutant	Status (Attainment, Nonattainment or Unclassified)	Threshold of Significance (tons/year)
<b>Carbon Monoxide (CO)</b>	Maintenance Plans	100
<b>Ozone (O<sub>3</sub>)</b>	Nonattainment (extreme)	10
<b>Oxides of Nitrogen (NO<sub>x</sub>)</b>	Nonattainment (extreme)	10
<b>Particulate Matter (PM<sub>10</sub>)</b>	Nonattainment (serious)	70
<b>Reactive Organic Gases (ROG)</b>	Nonattainment (extreme)	10
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>	Attainment	100
<b>Volatile Organic Compounds (VOC)</b>	—	—

Source: (CFR), Title 40, Volume 20, Part 93

The proposed action is located within the South Coast Air Basin. The South Coast Air Quality Management District (SCAQMD) is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. The SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects sources, and enforces such measures through educational programs or fines, when necessary. The applicable air quality plan for the South Coast Air Basin is the AQMP. The AQMP is based on Southern California Association of Governments (SCAG) growth forecast for the region, and incorporates measures to meet state and federal requirements. The SCAB is currently in nonattainment for the federal standards for ozone (O<sub>3</sub>), and particulate matter equal to or less than 10 microns in diameter (PM<sub>10</sub>) and 2.5 microns in diameter (PM<sub>2.5</sub>).

### 3.2 Noise

Noise is defined as unwanted sound or, more specifically, as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Noise in the Cities of San Bernardino, Loma Linda, Redlands, Yucaipa and Counties of San Bernardino and Riverside is generally long-term noise from vehicular traffic, trains, industrial processes and equipment, large group events and concentrated business activities, and short-term noise associated with construction activities. Traffic on Interstate 10 is considered a primary source of noise in areas located in close proximity to the freeway. Portions of the project are also located within unincorporated areas of San Bernardino County and Riverside County, and are therefore subject to both County Noise Ordinances.

The following provides the relevant noise ordinances for affected jurisdictions:

City of San Bernardino – All construction shall occur Monday through Friday, 7:00 AM to 8:00 PM except Sundays and Federal Holidays in accordance with the City of San Bernardino Municipal Code Chapter.

City of Loma Linda – All construction shall occur Monday through Friday 7:00 AM to 8:00 PM except on weekends or national holidays in accordance with the City of Loma Linda Municipal Code Chapter.

City of Redlands – All construction shall occur Monday through Friday, 7:00 AM to 6:00 PM except Sundays and Federal Holidays in accordance with the City of Redlands Municipal Code Chapter.

City of Yucaipa – All construction would occur Monday through Friday, 7:00 AM to 7 PM except Sundays and Federal Holidays in accordance with the City of Yucaipa Municipal Code Chapter.

County of San Bernardino – All construction shall occur Monday through Friday, 7:00 AM to 7:00 PM except Sundays and Federal Holidays in accordance with the San Bernardino County Municipal Code Chapter.

County of Riverside – Construction shall not occur between the hours of 6:00 PM and 6:00 AM during the months of June through September and would not occur between the hours of 6:00 PM and 7:00 AM during the months of October through May in accordance with the County of Riverside Municipal Code Chapter.

### 3.3 Odor

Currently, uses surrounding the proposed pipeline alignment are primarily residential, commercial and agricultural and do not generally produce objectionable odors. Occasional agricultural activities may include use of manure in the project area which result in temporary odors to the project area.

### 3.4 Water Resources

The project is located in the upper portion of the Santa Ana River watershed, which extends from the crest of the Crafton Hills in the northwest, to the crest of the Yucaipa Ridge of the San Bernardino Mountains to the northeast, and the Yucaipa Hills in the southeast to the Badlands

of San Timoteo Canyon to the southwest. Drainage in the area is through many small ephemeral creeks that all begin in the upland areas to the northeast and drain down to the southwest through Live Oak Canyon to San Timoteo Creek, and ultimately to the Santa Ana River. The ephemeral creeks are generally dry during most of the year, and have irregular flows with large amounts of unconsolidated sediments during occasional high intensity summer cloudbursts or long duration seasonal winter storms. The largest volume of these flow events occur during the winter storm season from November through April. The surface area within the Yucaipa Valley Water District drains to San Timoteo Creek in the lower southwest portion of the District planning area.

### 3.5 Wetlands

The US Army Corps of Engineers (USACE) and USEPA define wetlands as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Jurisdictional wetlands are those subject to regulatory authority under Section 404 of the CWA. Executive Order (EO) 11990, *Protection of Wetlands*, requires analysis of potential impacts to wetlands related to proposed federal actions. Numerous creeks and drainages tributary to the Live Oak Canyon Creek, San Timoteo Creek and the Santa Ana River, including wetlands regulated by Section 404 of the federal Clean Water Act, are adjacent to or cross portions of the proposed action.

The proposed action includes a total of six crossings over jurisdictional waters within or tributary to Live Oak Canyon Creek, San Timoteo Creek and the Santa Ana River. Table 3-2 gives the location and type of each crossing and the waterway crossed.

**Table 3-2. Creek Crossings**

Location of Crossing	Name of Waterway	Existing Crossing
Live Oak Canyon Road	Live Oak Creek	Bridge
Live Oak Canyon Road	San Timoteo Creek	Bridge
California Street	San Timoteo Creek	None
Van Leuven Street	San Timoteo Creek	Bridge
Hunts Lane	Santa Ana River	None
S. Sunset Court	Santa Ana River	None

### 3.6 Floodplains

Floodplains are belts of low, level ground present on one or both sides of a stream channel and are subject to either periodic or infrequent inundation by floodwater. Inundation dangers associated with floodplains have prompted legislation that largely limits development in these areas. In particular, EO 11988, *Floodplains Management*, requires actions to minimize flood risks and impacts. As indicated on Figure 7, the northern portion of the proposed action alignment is located in a 100-year flood plain. The reverse-osmosis facility is not located within mapped 100-year floodplain boundaries, according to the City of Yucaipa’s General Plan.

### 3.7 Public Health and Safety

A project-specific hazardous site record search was conducted by Dudek on December 19, 2008 for the proposed alignment (Dudek 2008). This memorandum report is included as

Appendix A of this EA. A records search listed 162 sites located directly along or within ½ mile of the proposed action alignment. It should be noted that a listing of a specific site within a hazardous sites database does not necessarily indicate an impact to subsurface environmental resources has occurred or would occur as a result of proposed action implementation. Two businesses located directly along the proposed action alignment were listed in the LUST database. These businesses consist of Truck O Mat (1955 Hunts Lane) and Matlock Transportation (550 E. Caroline Street). Both cases involved a release of gasoline, resulting in the potential for hydrocarbon-impacted soil to exist within the subsurface at these properties. A total of 21 businesses located within ½ miles of the proposed action were listed in the LUST, OTHER, and SWL databases. Three of these properties may have impacted the environmental conditions along the alignment (Dudek 2008).

### 3.8 Surface Resources

Geological resources typically consist of surface and subsurface materials and their inherent properties. Principal geologic factors affecting the ability to support structural development are seismic properties (i.e., potential for subsurface shifting, faulting, or crustal disturbance), soil stability, and topography.

Soils. The proposed action would be installed within existing roadways, where soils are compacted and covered with pavement and other road construction materials.

Topography. The project area is nearly level and slopes down gently from east to west. No significant or unique geologic or topographic features occur in the project area.

Seismic Activity. The project is located in a seismically active region and is subject to events along active and potentially active regional faults. Official data issued by the California Geological Survey indicates that portions of the project alignment fall within an Alquist-Priolo Fault Zone (YVWD/EPA 2006) (see Figure 8). The closest faults to the proposed action include the San Jacinto Fault (City of San Bernardino 2005), Cherry Valley Fault and Banning Fault (City of Beaumont 2007). The Cherry Valley and Banning fault lines are located northeast of I-10 and within the boundaries of the Cities of Beaumont and Calimesa. The California Geological Survey has not reported the Cherry Valley Fault as active or potentially active. The proposed segments of the Cherry Valley Fault have, however, been designated by the County of Riverside and the City of Calimesa as a Fault Hazard Zone, as depicted on the Exhibit 5.2 of the Calimesa General Plan. Also, the western segment of the Banning fault which extends from the San Jacinto fault east to the Calimesa area is considered inactive because it does not break Quaternary alluvium. In fact, the fault zone in this area has no surface expression; the location of the fault has been inferred from gravity data and other indirect geological evidence (City of Calimesa 1994).

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Yucaipa Valley Regional Brineline Extension Project - EA  
100 Year Floodplain

FIGURE  
7

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Yucaipa Valley Regional Brineline Extension Project - EA  
Alquist-Priolo Earthquake Fault Zone Boundaries

FIGURE  
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**US EPA ARCHIVE DOCUMENT**

### 3.9 Vegetation and Wildlife

Biological resources include native or naturalized plants and animals and the habitats in which they occur. Sensitive plant and wildlife species are subject to regulations under the authority of the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG). The vegetation and wildlife information in this document is based on the Biological Resources Letter Report, included as Appendix B.

Flora. The proposed action includes approximately 14 miles (74,000 linear feet) of pipeline located within existing roadways or adjacent disturbed/developed areas as well as a reverse-osmosis treatment system within the existing developed footprint of the WRWRF. No natural vegetation communities are present within the project alignment.

Fauna. In general, the project footprint is limited to existing disturbed/developed areas and notable wildlife species are not expected to occur in the project area.

### 3.10 Threatened and Endangered Species

Special-status plant and wildlife species are subject to regulations under the authority of the USFWS and CDFG. Several plant and animal species have been found in Riverside County and throughout California that are federally or state-listed (California) as threatened, endangered, candidate for protection or species of concern. Federal lists of species officially listed or proposed as threatened or endangered are subject to permit restrictions regulated under Sections 7 and 10(a) of the Endangered Species Act (ESA).

No special-status plant species were identified on site during surveys. Based on the habitat assessment and reconnaissance survey conducted in October 2007 and December 2008, no special-status plants are expected to occur within the project footprint. Based on the results of the literature search (CDFG 2007, CNPS 2007, Dudek 2003), no special-status plant species are known to occur within the disturbed/developed project footprint. Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*), a state- and federally-listed endangered and CNPS List 1B species, is known to occur upstream of the proposed action and has a moderate potential to occur adjacent to the project within the Santa Ana River. Four CNPS List 1 or 2 species also have at least a moderate potential to occur adjacent to the project within the Santa Ana River, including Parish's gooseberry (*Ribes divaricatum* var. *parishii*), a CNPS List 1A species, San Bernardino aster (*Symphyotrichum defoliatum*), a CNPS List 1B species, bristly sedge (*Carex comosa*), a CNPS List 2 species, and California satintail (*Imperata brevifolia*), a CNPS List 2 species.

Additionally, based on the results of the literature search, reconnaissance surveys and habitat assessments, no special-status wildlife species are known to occur within the project footprint. In general, the project footprint is limited to existing disturbed/developed areas and special-status wildlife species are not expected to occur. However, suitable habitat for burrowing owl, a California Species of Concern, was identified along approximately 1,000 feet of the proposed action within existing disturbed areas near the WRWRF (Figure 9). No burrowing owl or burrowing owl sign were observed during the habitat assessment, but the area is considered suitable due to the presence of suitable burrows associated with California ground squirrel (*Spermophilus beecheyi*).

Vegetation communities that may support special-status wildlife species are located in various locations within 500 feet of the proposed action. Riversidean sage scrub is considered suitable habitat for the federally-listed threatened California gnatcatcher (*Polioptila californica*) and is present along portions of the project in Live Oak Canyon Road and San Timoteo Canyon Road.

Native vegetation communities and land covers within the Santa Ana River include southern cottonwood-willow riparian forest, which is potential habitat for the state- and federally listed endangered Least Bell's vireo (*Vireo belli pusillus*) and the state- and federally listed endangered southwestern willow flycatcher (*Empidonax traillii extimus*), and open channel, which is potential habitat for the federally-listed threatened Santa Ana Sucker (*Catostomus santaanae*). Although there are no records of Santa Ana sucker occurring in the Santa Ana River in the vicinity of the proposed action, there are records of Santa Ana sucker occurring along a 2 mile reach of the river approximately 3 miles downstream from the proposed action.

Suitable habitat for least Bell's vireo and southwestern willow flycatcher is also present in San Timoteo Creek within 500 feet of the proposed pipelines in San Timoteo Canyon Road. According to the Biological Resources Technical Report (Dudek 2003) prepared for the District's Non-Potable Water Distribution System Project, there are four pairs of least Bell's vireo within 500 feet of the proposed action at the intersection of San Timoteo Canyon Road and Live Oak Canyon Road. In addition, one southwestern willow flycatcher and a least Bell's vireo pair have been observed within 500 feet of the alignment along San Timoteo Canyon Road, west of Redlands Boulevard.

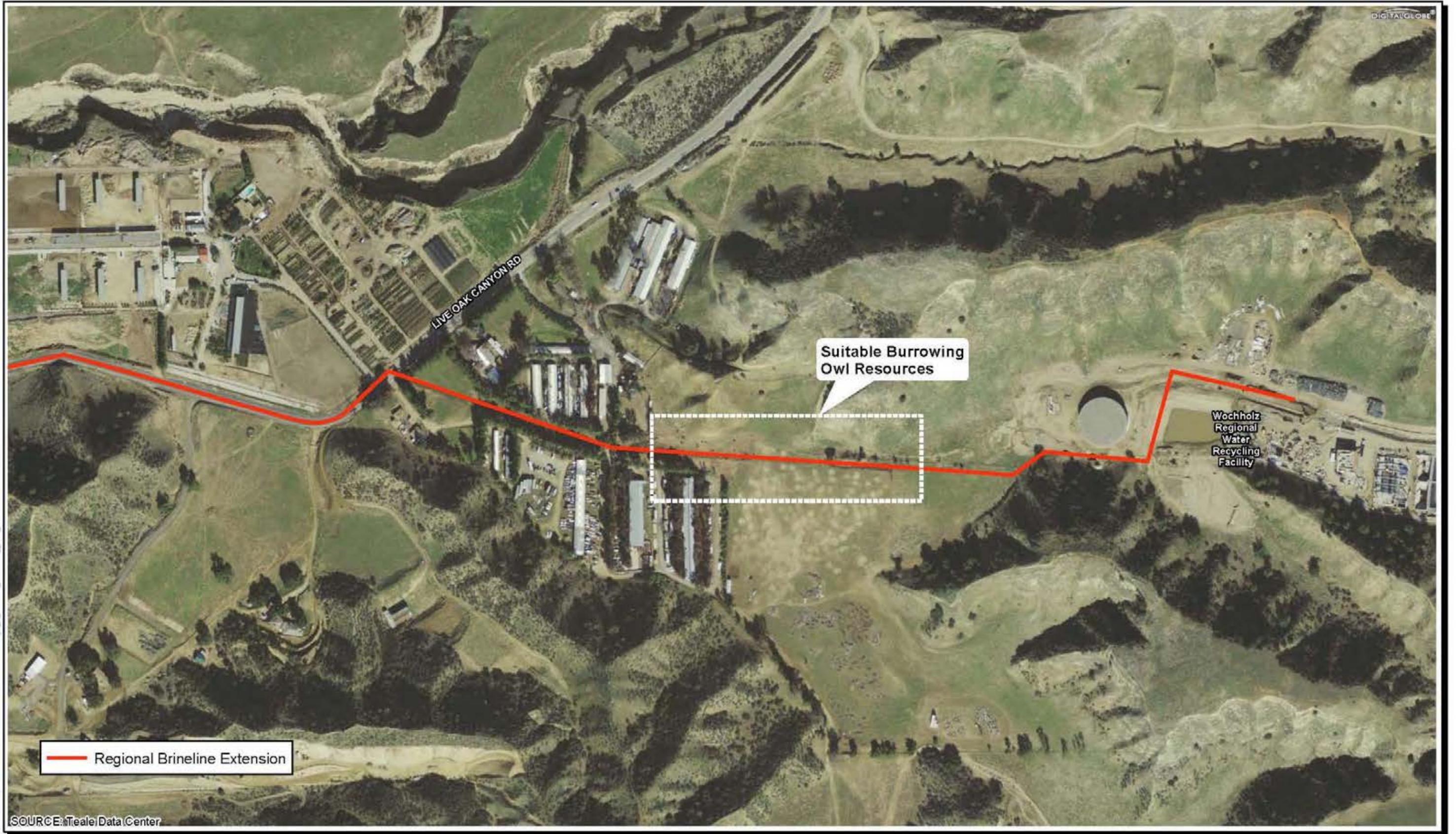
### **3.11 Cultural Resources and Historic Property**

Cultural resources represent and document activities, accomplishments, and traditions of previous civilizations and link current and former inhabitants of an area. A records search and cultural resources survey was conducted by ASM & Associates in April 2009 for the proposed action, and is included as Appendix C of this EA (ASM 2009). The records search was conducted through the San Bernardino Museum Archaeological Information Center (AIC), and in addition a pedestrian survey of unpaved portions of the alignment was completed. Based on the records search, 39 cultural resources were identified within 1/8-mile of the proposed action, of which 26 are located adjacent to or cross the project alignment. Three of these resources are eligible for inclusion in the National Register of Historic Places (NRHP), one is potentially eligible, three are California Historical Landmarks (CHL), and three are California Points of Historical Interest (CPHI). No cultural resources were found within the unpaved portions of the project alignment. In addition, a Sacred Lands File search conducted by the Native American Heritage Commission did not indicate the presence of Native American cultural resources within 0.5 mile of the project area.

While archaeological surveys have been carried out over the majority of the project alignment, much of Phase 1 has not undergone recent survey and could contain unrecognized cultural resources, including cultural artifacts affiliated with Native American tribes and individuals in the area.

### **3.12 Land Use and Infrastructure**

Land use is regulated by management plans, policies, regulations, and ordinances that determine the type and extent of land use allowable in specific areas and protect specially designated or environmentally sensitive areas.



Yucaipa Valley Regional Brineline Extension Project - EA  
**Suitable Burrowing Owl Habitat**

FIGURE  
**9**

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The proposed action alignment would extend approximately 14 miles from the City of San Bernardino to the WRWRF in the City of Yucaipa. The proposed action is located within the Cities of San Bernardino, Loma Linda, Redlands, and Yucaipa as well as unincorporated areas of San Bernardino County and Riverside County. Within these jurisdictions, the proposed action is designated as Residential, Industrial/Commercial, Learning Institutions, Vacant/Undeveloped, Parks, and Open Space. These designations include public utilities as an allowable use. The proposed action is not located within important farm land or within the coastal zone as delineated under the Farmland Protection Policy Act and Coastal Zone Management Act respectively.

### **3.13 Aesthetics**

Aesthetic resources are defined as the natural and manufactured features that make up the visual qualities of an area. The project area is a residential, commercial and agricultural community with low levels of neighborhood traffic. The linear project alignment is surrounded by agricultural fields, residential neighborhoods, educational institutions, and some commercial development such as gas stations. The proposed action alignment is not visible from a state scenic highway nor is it located within a wild or scenic river subject to the Wild and Scenic Rivers Act.

### **3.14 Socioeconomics**

Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly population and economic activity. Human population is affected by regional birth and death rates as well as net in- or out-migration. The population of the County of Riverside was 2,189,641 in 2010. This represents nearly a 42 percent increase from the County's 2000 population. Similarly, the population of San Bernardino County was 2,035,210 in 2010 which represents a 19 percent increase from 2000 (SCAG 2011). Economic activity typically comprises employment, personal income, and industrial growth. As of June 2011, the total labor force of Riverside-San Bernardino-Ontario, CA was approximately 1.74 million, with an unemployment rate of approximately 14.2 percent, or 248,000 persons (US Bureau of Labor Statistics 2011).

### **3.15 Waste Management**

Waste management refers primarily to solid and hazardous wastes. Solid waste disposal is provided by Burrtec Waste Industries, Inc., which operates under a franchise agreement with the Cities of San Bernardino, Loma Linda, Redlands, and Yucaipa as well as unincorporated areas of San Bernardino County and Riverside County. The most commonly utilized landfills for these jurisdictions include Azusa Land Reclamation Co. Landfill (Los Angeles), Bakersfield Metropolitan (Bena) SLF (Kern), California Street Landfill (San Bernardino), Colton Sanitary Landfill (San Bernardino), El Sobrante Landfill (Riverside), Mid Valley Sanitary Landfill (San Bernardino), San Timoteo Sanitary Landfill (San Bernardino) and Victorville Sanitary Landfill (San Bernardino) (CalRecycle 2011).

Hazardous waste is a waste material with properties that make it dangerous or potentially harmful to human health or the environment. The universe of hazardous wastes is large and diverse; hazardous wastes can be liquids, solids, contained gases, or sludges. The proposed action consists of a pipeline alignment within existing roads and reverse-osmosis treatment facility. The project site

does not currently generate solid or hazardous waste. Hazardous materials contamination on the project site and general area is discussed above in Section 3.7, *Public Health and Safety*.

### 3.16 Transportation

Regional access to the project area is provided via Interstate 10, which runs north-south, directly north of the proposed pipeline alignment. Traffic in the project region is characteristic of a low-density commercial, residential, and agricultural community. The proposed pipeline alignment would be within existing rights-of-way (see Section 1.3, *Project Location* for listed roadways).

### 3.17 Energy

In order to comply with EO 13514, the U.S. government must assess projects with the goal to reduce greenhouse gas emissions by reducing energy consumption through strategic sustainable development and energy-efficient building design and material selection. Electricity is provided by Southern California Edison and the Southern California Gas Company provides natural gas services in the project region. The proposed pipeline alignment is within existing roadways that do not generate demand for energy consumption. The reverse-osmosis facility would include components such as feeder pumps, membrane pressure vessels, an interstage booster pump, and instrumentation which would require energy during operation.

### 3.18 Environmental Justice and Protection of Children

Environmental Justice. In 1994, EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, was issued to focus attention of federal agencies on human health and environmental conditions in minority and low-income communities and to ensure that disproportionately high and adverse human health or environmental effects on these communities are identified and addressed. Based on the 2010 Census information (Table 3-3), 39 percent of the total population in San Bernardino County is classified of a minority background, and 49 percent are classified as Hispanic (US Census Bureau 2011). By comparison, minority populations respectively comprise 39, and 42 percent of the total populations of Riverside County, and the State of California (US Census Bureau 2011).

**Table 3-3. Population Totals and Percentages of Totals by Race for San Bernardino County, Riverside County, and the State of California**

	San Bernardino County	Riverside County	State of California
<b>Total Population</b>	2,035,210	2,189,641	37,253,956
<b>Minority Population<sup>3</sup></b>	798,658 (39.2%)	854,494 (39.0%)	15,800,022 (42.4%)
Hispanic/Latino	1,001,145 (49.2%)	995,257 (45.5%)	14,013,719 (37.6%)
Asian-American	154,710 (7.6%)	161,542 (7.4%)	5,556,592 (14.9%)
African-American	208,806 (10.3%)	166,032 (7.6%)	2,683,914 (7.2%)
Native American/Alaska Native	43,859 (2.2%)	43,724 (2.0%)	723,225 (1.9%)

**Table 3-3. Population Totals and Percentages of Totals by Race for San Bernardino County, Riverside County, and the State of California**

	San Bernardino County	Riverside County	State of California
Native Hawaiian/Pacific Islander	13,517 (0.6%)	14,108 (0.6%)	286,145 (0.8%)
Other/Multi-Racial	488,471 (24.0%)	494,978 (22.6%)	15,453,123 (18.9%)
<b>Non-Minority Population<sup>6</sup></b>	<b>1,153,161 (56.6%)</b>	<b>1,335,147 (61.0%)</b>	<b>21,453,934 (57.6%)</b>

Source: U.S. Census Bureau 2011

Note: Minority Groups are not mutually exclusive.

According to Poverty Status in 1999 (Poverty level data from the 2010 Census is not available as of conducting this report) 12.6 percent of households in the County of San Bernardino and 10.7 percent of households in the County of Riverside were below the poverty level, both of which were higher than the State of California at 10.6 percent (US Census Bureau 2011).

Protection of Children. Because children may suffer disproportionately from environmental health risks and safety risks, EO 13045, *Protection of Children from Environmental Health and Safety Risks*, was introduced in 1997 to prioritize the identification and assessment of environmental health risks and safety risks that may affect children and to ensure that federal agencies' policies, programs, activities, and standards address environmental health risks and safety risks to children. According to the 2010 Census (Table 3-4), the percentage of the population in the County of San Bernardino under age 18 was 29.2 percent (US Census Bureau 2011). This is greater than Riverside County (28.3 percent), and the State of California (25.0 percent) (US Census Bureau 2011). As the project area is a mix of commercial, residential, educational and agricultural, there are children present and living in this area.

**Table 3-4. Population Totals and Percentages of Totals under Age 18 for the County of San Bernardino, Riverside County, and the State of California**

	San Bernardino County	Riverside County	State of California
<b>Total Population</b>	<b>2,035,210</b>	<b>2,189,641</b>	<b>37,253,956</b>
Population under 18	594,588 (29.2%)	620,108 (28.3%)	9,295,040 (25.0%)

Source: U.S. Census Bureau 2011

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**US EPA ARCHIVE DOCUMENT**

## SECTION 4 ENVIRONMENTAL CONSEQUENCES

### 4.1 Air Quality

Significance of air quality impacts is based on the degree to which the project is consistent with SCAG’s growth forecasts. If a project is consistent with growth forecasts, its resulting impacts were anticipated in the Air Quality Management Plan (AQMP) and are considered to be less than significant. Growth forecast in the AQMP is based on approved General Plans, Community Plans, and Redevelopment Plans.

The proposed action would not alter or introduce new conflicts with land use designations. The project does not include development of new homes or businesses and therefore would not result in population growth in the South Coast Air Basin. Operation of the proposed pipeline would result in minimal emissions from occasional vehicle trips to inspect and maintain the pipeline. Additionally, there are no emissions associated with the reverse-osmosis facility.

Construction emission would come from heavy equipment exhaust, construction-related trips by workers, material hauling trucks, and associated fugitive dust generation from clearing and grading activities. The principal pollutants would be carbon monoxide (CO), volatile organic compounds (VOC), oxides of nitrogen (NO<sub>x</sub>) and particulate matter less than 10 microns in diameter (PM<sub>10</sub>). VOC and NO<sub>x</sub> are precursors of ozone (O<sub>3</sub>). Table 4-1 below lists the construction thresholds under Code of Federal Regulations (CFR), Title 40, Volume 20, Part 93 – Conformity of Federal Actions to State or Federal Implementation Plans, and estimated construction and operational emissions for the proposed action. Emission modeling outputs are attached as Appendix D of this EA.

**Table 4-1. Proposed Action Construction and Operation Emissions**

Pollutant	Status (Attainment, Nonattainment or Unclassified)	Threshold of Significance for the Area (if applicable)	Construction Emissions (Tons/Year)	Operation Emissions (Tons/Year)
Carbon Monoxide (CO)	Maintenance Plans	100	2.1	--
Ozone (O <sub>3</sub> )	Nonattainment (extreme)	10	--	--
Oxides of Nitrogen (NO <sub>x</sub> )	Nonattainment (extreme)	10	3.1	--
Particulate Matter (PM <sub>10</sub> )	Nonattainment (serious)	70	5.8	--
Reactive Organic Gases (ROG)	Nonattainment (extreme)	10	0.4	--
Sulfur Dioxide (SO <sub>2</sub> )	Attainment	100	<1	--
<b>Volatile Organic Compounds (VOC)</b>	--	--	--	--

Source: CARB Road Construction Model, Version 6.3.1

\*The computer program did not estimate SO<sub>x</sub>. Estimates were manually calculated using the emission factor for SO<sub>x</sub> on the the CARB’s BURDEN model (0.00024 lbs/mile).

Due to the limited construction activities associated with the proposed action, construction emissions would be well below the federal de minimis levels. The types and quantities of construction equipment that would be used for the project would be typical of the industry and would not be of sufficient magnitude in quantity to exceed those assumptions used in the preparation of construction equipment emissions in the AQMP. Because the AQMP has accounted for construction-related emissions, construction emissions generated by the project would be consistent with those included in the emissions inventory of the AQMP and, therefore, would be consistent with construction-related emissions projected in the AQMP. Hence, construction of the proposed action would not conflict with or obstruct implementation of the applicable air quality plan, would be in compliance with applicable standards, and would not result in adverse air quality impacts. However, mitigation measures AIR-1 and AIR-2 are provided to ensure effects related to air quality remain below significance thresholds during construction activities.

**AIR-1** Best available control measures shall be used during grading. The menu of enhanced dust control measures includes the following:

- Cover all haul trucks or maintain at least 2 feet of freeboard.
- Cover or water daily any on-site stockpiles of debris, dirt or other dusty material.
- Use adequate water and/or other dust palliatives shall be used on all disturbed areas in order to avoid particle blow-off.
- Wash down or sweep paved streets as necessary to control trackout or fugitive dust.
- Cover or tarp all vehicles hauling dirt or spoils on public roads if sufficient freeboard is not available to prevent material blow-off during transport.
- Ground cover would be re-established through seeding and watering on the disturbed parts of the construction area.

**AIR-2** Equipment Emissions shall be reduced by implementing the following:

- Equipment should be properly tuned and maintained.
- Encourage car pooling for construction workers.
- Limit lane closures to off-peak travel periods.
- Park construction vehicles off traveled roadways.
- Encourage receipt of materials during non-peak traffic hours.
- Minimize obstruction of through traffic lanes from construction equipment or activities to the greatest extent feasible.

Long-term emissions associated with travel to and from the project would be minimal. Although air pollutant emissions would be associated with the project, they would neither result in the violation of any air quality standard (comprising only an incremental contribution to overall air basin quality readings), nor contribute substantially to an existing or projected air quality

violation. Lastly, there are no emissions associated with the reverse-osmosis facility. Impacts would not be considered adverse.

Under the No Action Alternative, no construction activity would occur, and no changes to the existing air quality environment would occur. Therefore, no direct or indirect short-term or long-term impacts to air quality would occur, and conditions would remain as described in Section 3.1, *Air Quality*.

#### 4.2 Noise

Noise impact analysis typically evaluates potential changes in existing conditions that could result from implementation of a proposed action. Implementation of the proposed action would involve the installation of a 14 mile brine conveyance pipeline and associated reverse-osmosis treatment facility. Construction of the proposed action would include trenching, boring, soil movement, pipe laying, and other construction activities that would result in noise levels that are higher than existing ambient levels. Construction equipment during these activities would include a directional drilling rig, delivery trucks, dump trucks, a crane loader, backhoe, an engine-driven hydraulics pump, an engine-driven generator, soil classifier equipment and forklift. Noise generated by construction equipment would occur with varying intensities and durations during the various phases of construction.

During construction the project would be required to be compliant with the City of San Bernardino, City of Loma Linda, City of Redlands, City of Yucaipa, County of San Bernardino and the County of Riverside Noise standards, which apply to noise measured at the nearest sensitive receptor (adjacent residences and educational institutions). Riverside County Noise Ordinance 847 limits non-construction related noise to within 45 decibels and 75 decibels depending on the General Plan Land Use Designation and time of day, and construction noise to not occur between the hours of 6:00 PM and 6:00 AM during the months of June through September and would not occur between the hours of 6:00 PM and 7:00 AM during the months of October through May (County of Riverside 2007). The County of San Bernardino Development Code Section 83.01.080 limits non-construction related noise to within 45 decibels to 65 decibels depending on the land use and time of day, and construction noise to not occur between the hours of 7:00 PM and 7:00 AM, except Sundays and Federal holidays (County of San Bernardino 2007). Individual city noise requirements to which the proposed action would be subject are listed in Section 3.2, *Noise*.

In addition to the project construction noise being in compliance with applicable standards, the construction noise would be short-term and temporary in nature. Moreover, construction would not occur along the entire alignment all at once, but would rather occur in stages as the various project phases are completed. Therefore, short-term noise impacts would not be adverse. Mitigation measure NOI-1 would ensure proposed action construction activities would remain in compliance with all local jurisdictional noise requirements.

- NOISE-1** In order to comply with the applicable noise ordinances, the District shall require that construction activities for the proposed action be restricted to the hours of 7:00 AM to 6:00 PM Monday through Friday and would not operate on Sundays or Federal holidays, except in the event of an emergency.

Any work completed outside the hours of 7:00 AM to 6:00 PM would be required to obtain the necessary permits. Noise impacts associated with trenchless construction operations are similar to cut-and-cover pipeline construction. However, rather than the construction noise progressing linearly, the noise would be confined to entry and exit locations utilized during trenchless construction. Thus, noise impacts could last for several weeks rather than a few days at the area adjacent to the access points. Underground pipelines do not generate noise above ground, therefore upon completion of construction the pipelines would not have significant noise impacts.

Construction and operation of the reverse-osmosis facility would result in the generation of both short-term noise during construction and long-term noise during operation of the expanded water reclamation facility. The project site is surrounded by open space, and the closest human receptors are located approximately 2,000 feet away. The closest areas designated for residential land use are approximately 800 feet southwest of the site and 900 feet north of the site.

The City of Yucaipa's performance standards for residential and other noise sensitive receivers are daytime 55 dBA Leq and 75 dBA Lmax and nighttime 45 dBA Leq and 65 dBA Lmax.

Based on the type of construction proposed, maximum construction noise levels at the reverse-osmosis facility would range from approximately 65 to 90 dBA at a distance of 50 feet from the operating equipment. Due to attenuation, the maximum noise level from construction at the nearest existing noise receptors would be approximately 55 dBA. The intervening topography including hills and ridges would act as barriers to noise transmission, further reducing noise levels at these receptors. As a result, short-term noise impacts from construction of the reverse-osmosis facility are not considered adverse.

Operation of the reverse-osmosis facility will generate long-term noise. Mechanical equipment is anticipated to include four pumps with 400 horsepower motors. These pumps are anticipated to generate noise levels of approximately 85 to 90 dBA. The pumps would be located within a pre-manufactured building, which is expected to reduce noise by approximately 10 to 30 dBA. Additionally, with attenuation the mechanical equipment is calculated to generate a noise level less than 30 dBA at the closest existing human receptors and 38 dBA at the closest potential future residences. This noise level would comply with all relevant jurisdictional noise criteria.

With incorporation of the proposed pre-manufactured building, and identified mechanical equipment, the operational noise level at existing and potential adjacent future land uses is anticipated to comply with all relevant jurisdictional noise criteria, and as a result noise impacts resulting from the operation of the reverse-osmosis facility are not considered significant.

Under the No Action Alternative, no direct or indirect short-term or long-term noise-generating activity or associated impacts would occur and conditions would remain as described in Section 3.2, *Noise*.

#### **4.3 Odor**

Determination of significance for potential odor impacts to the environment is based on the potential for odor to result from any action taken within the project area. Under implementation

of the proposed action there would be no new sources of odors. Therefore, impacts to odor would not occur

Under the No Action Alternative, the proposed pipeline and reverse-osmosis facility would not be built and therefore there would be no impacts due to odors at the project site or in the surrounding area.

#### 4.4 Water Resources

Determination of the significance of potential impacts on water resources is based on water availability, quality, and use and associated regulations such as the CWA. The proposed action would construct a brine conveyance pipeline in an existing roadway and reverse-osmosis facility within the existing WRWRF footprint. Exposed soils from excavation boring and trenching activities could erode and be transported to nearby water resources. Sedimentation to drainages in the project area could have adverse effects on water quality. Accidental spills or disposal of potentially harmful materials used during construction could wash into and pollute surface waters or groundwater. Additionally, inadvertent returns caused by hydrofracture that could occur during the directional drilling proposed at the Santa Ana River could cause the deposition of small amounts of bentonite drilling fluid within surface waters. These potential impacts would be short-term (during the construction phase) and would be mitigated to below levels of significance by implementing mitigation measures HYDRO-1 through HYDRO-4.

**HYDRO-1** Short-term water quality impacts during construction shall be minimized by complying with federal and state regulations for groundwater discharge into surface water bodies. All discharges shall be in compliance with RWQCB requirements. If dewatering activities associated with trenching, boring and excavation result in possible exposure to contaminated groundwater and/or soils, the District shall ensure compliance with the State of California CCR Title 24 Health and Safety Regulations as managed by the San Bernardino County Department of Environmental Health. Additionally, the District shall ensure compliance with the Clean Water Act and National Pollutant Discharge Elimination System regulations regarding water discharge from construction activities to surface waters. Additionally, the project would be required to prepare and implement a stormwater pollution prevention plan (SWPPP) to protect water quality.

**HYDRO-2** The construction contractor shall be required to implement BMPs during construction in accordance with the plans and specifications prepared for the project, the General Construction Storm Water Permit (NPDES Order 99-08-DWQ), and to the satisfaction of the District Engineer. These BMPs shall address temporary soils stabilization, temporary sediment control, wind erosion control, tracking control, and non-stormwater management.

The following best management practices shall be adhered to during construction:

- Gravel bags, silt fences, etc. shall be placed along the edge of the project site in order to contain particulate.

- All concrete washing and spoils dumping will occur in a designated location.
- Construction stockpiles, uncovered material and dumpsters will be covered in order to prevent blow-off or runoff during weather events.
- A pollution control education plan shall be developed by the General Contractor and implemented throughout all phases of development and construction.
- Severe weather event erosion control facilities shall be stored on site for use as needed.

**HYDRO-3** All equipment and vehicles required for construction, maintenance and operation shall be refueled or maintained within paved roadways or designated staging areas. All stationary equipment, such as motors or generators, shall be stored on the existing access road, drip pans shall be placed under all potential discharge conduits or leaks. All connections and fittings of hoses shall be periodically checked for leaks.

**HYDRO-4** All project related spills of hazardous materials shall be reported to the appropriate entities, including the USFWS, CDFG, RWQCB, and shall be cleaned up immediately. Contaminated soils shall be removed to approved disposal areas.

Impacts would not be adverse with implementation of mitigation measures HYDRO-1 through HYDRO-4. Additionally, the proposed action is not located within a sole source aquifer or within a wild and scenic river; therefore, impacts would not be adverse regarding source water protection and rivers subject to the Wild and Scenic Rivers Act.

Under implementation of the No Action Alternative, no pipeline or reverse-osmosis facility would be constructed, conditions would remain as described in Section 3.2, *Water Resources*, and no impacts to groundwater or surface water quality would occur.

#### 4.5 Wetlands

Determination of the significance of potential impacts to wetlands in the U.S. is based on their presence or absence in the areas that would be impacted. EO 11990, *Protection of Wetlands*, and the CWA have regulatory authority over wetlands in the US. Numerous creeks and drainages tributary to the Live Oak Canyon Creek, San Timoteo Creek and the Santa Ana River, including wetlands regulated by Section 404 of the federal Clean Water Act, are adjacent to or cross portions of the proposed action.

The proposed action includes a total of six crossings over jurisdictional waters within or tributary to Live Oak Canyon Creek, San Timoteo Creek and the Santa Ana River. However, the pipeline would be placed within the existing roadway, hung from existing bridges, or trenchless construction would be used to cross beneath the drainages to avoid all impacts to riparian and sensitive natural communities. Table 4-2 gives the location and type of each crossing and the waterway crossed.

**Table 4-2. Creek Crossings**

Location of Crossing	Name of Waterway	Existing Crossing
Live Oak Canyon Road	Live Oak Creek	Bridge
Live Oak Canyon Road	San Timoteo Creek	Bridge
California Street	San Timoteo Creek	None
Van Leuven Street	San Timoteo Creek	Bridge
Hunts Lane	Santa Ana River	None
S. Sunset Court	Santa Ana River	None

At the majority of crossings, pipeline will be placed directly within the existing roadways or hung alongside existing bridge crossings. However, where this is not feasible, trenchless construction methods (directional drilling or jack and bore) would be used to cross under the jurisdictional areas. Trenchless construction methods would involve entry and exit points located within the 30-foot construction corridor, and would not impact jurisdictional waters or wetlands. At the Santa Ana River, trenchless construction would occur via directional drilling to construct the pipeline beneath the river. Entry and exit points for the directional drilling activities at the Santa Ana River would be located within designated staging areas located in upland areas outside of jurisdictional water or wetlands (Figure 5d).

Due to the proximity of jurisdictional waters and wetlands traversed by the proposed action, indirect impacts during construction could occur. Indirect impacts could result from adverse “edge effects,” and may be short-term in nature, related to construction, or long-term in nature, associated with development in proximity to biological resources within natural open space. During construction activities, short-term indirect impacts may include dust which could disrupt plant vitality, construction-related soil erosion and water runoff. However, standard construction Best Management Practices (BMPs) and minimization measures to control construction-related dust, erosion, and runoff will be implemented and will ameliorate these effects. In addition, all project construction will be subject to the typical restrictions and requirements that address erosion and runoff, including the federal Clean Water Act, National Pollution Discharge Elimination System (NPDES), and preparation of a Stormwater Pollution Prevention Plan.

In addition, temporary indirect impacts from inadvertent returns associated with directional drilling could affect water quality if located within a flowing stream channel in the Santa Ana River. Potential temporary indirect impacts to jurisdictional waters and wetlands would be reduced to less than significant through the implementation of mitigation measure BIO-1.

- BIO-1** Immediate containment and/or clean-up of inadvertent returns associated with directional drilling would occur, as well as monitoring and quantification of impact by a qualified biologist. Depending on the amount of material, the inadvertent return may be removed. If it needs to be removed, the material would be removed by hand tools. The area would be accessed by whatever means were feasible (i.e., on foot, by boat, etc.).

Under the No Action Alternative, the proposed pipeline and reverse-osmosis facility would not be constructed. Given that conditions would remain unchanged from those described in Section 3.5, *Wetlands*, no impacts would occur under implementation of the No Action Alternative.

#### 4.6 Floodplains

As indicated on Figure 7, the northern portion of the proposed action alignment is located in a 100-year flood plain. The proposed action involves the extension of the existing SARI pipeline to the WRWRF. It is unlikely that the project components occurring within the 100-year floodplain would impede or redirect flow because the proposed action would be buried beneath the ground surface, and would thus have no effect upon flood flows. Therefore, impacts associated with placement of structures in a 100-year floodplain are considered less than significant.

The reverse-osmosis facility is not located within mapped 100-year floodplain boundaries, according to the City of Yucaipa's General Plan.

If the No Action Alternative were selected, the proposed action would not be constructed; therefore, there would be no activities that result in either direct or indirect impacts to floodplains. Conditions would remain as described in Section 3.2, *Water Resources*.

#### 4.7 Public Health and Safety

The proposed action would place pipeline primarily under existing roadways, within public right-of-ways. A records search of hazardous sites located within ½ miles of the proposed action indicates that the project may be affected by hazardous materials (Dudek 2008). Appendix A includes the results of the database search. Two businesses located directly along the proposed action alignment were listed in the LUST database (Dudek 2008). These businesses consist of Truck O Mat (1955 Hunts Lane) and Matlock Transportation (550 E. Caroline Street). Both cases involved a release of gasoline, resulting in the potential for hydrocarbon-impacted soil to exist within the subsurface at these properties. A total of 21 businesses located within ½ miles of the proposed action were listed in the LUST, OTHER, and SWL databases. Three of these properties may have impacted the environmental conditions along the alignment.

Impacts resulting from exposure to contaminated soils can be mitigated to less than significant by incorporating mitigation measures HAZ-1 through HAZ-3:

- HAZ-1** The Riverside and/or San Bernardino Department of Environmental Health and California Regional Water Quality Control Board shall be contacted regarding provisions for possible reuse as backfill soils impacted by hydrocarbons. If necessary, excavated soils shall be placed on an impermeable liner and covered with an impermeable material to prevent spread of contaminated materials. A health and safety plan shall be prepared to manage and dispose of impacted soil, if encountered during construction.
- HAZ-2** Air monitoring shall be conducted during construction of the proposed action for the presence of hydrocarbons near the gas-station sites referenced in the Hazardous Sites Record Search (*Appendix A*).
- HAZ-3** YVWD shall have a qualified hazardous materials professional on site while working in areas where contamination may be encountered. The responsibility of this professional would be to monitor the work site for contamination and to implement mitigation measures as needed to prevent

exposure to workers or the public. These measures may include signage and dust control.

Additionally, relatively small amounts of hazardous substances, such as fossil fuels, lubricants, and solvents would be used on site for construction and maintenance of the project. These materials shall be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Consequently, use of these materials for their intended purpose would not pose a significant risk to the public or environment, and impacts would be less than significant.

The following project design features have been incorporated into the proposed action to avoid or minimize adverse public health and safety impacts:

- All equipment required for maintenance activities would be refueled or maintained within designated staging areas (adjacent paved surfaces). BMPs to contain accidental spills of hazardous materials would be utilized when performing vehicle maintenance or refueling.

The reverse-osmosis facility would utilize the following chemicals continuously during normal operation: threshold inhibitor (3 mg/L), sulfuric acid (30 mg/L), chlorine (5 mg/L), ammonia (1 mg/L), and lime (30 mg/L). Of these chemicals, sulfuric acid, ammonia, and lime would require new bulk deliveries, while the other chemicals would remain a part of existing bulk deliveries.

The transport, use, and storage of these chemicals are controlled by state and federal regulations. These regulations have been adopted by the regulatory agencies to reduce the potential risk of exposure of people to these substances. Permitting of the use of such substances requires that adequate containment of the substances is provided to reduce the potential for release into the environment. These regulatory agencies have determined that compliance with the regulations governing the transport, storage, and use of these The transport, use, and storage of these chemicals are controlled by state and federal regulations. These regulations have been adopted by the regulatory agencies to reduce the potential risk of exposure of people to these substances. Permitting of the use of such substances requires that adequate containment of the substances is provided to reduce the potential for release into the environment. These regulatory agencies have determined that compliance with the regulations governing the transport, storage, and use of these substances is adequate to mitigate the potential for release to a non-significant level. No mitigation other than compliance with applicable regulations is required.

Under the No Action Alternative, the proposed action would not be constructed. Public health and safety conditions would remain as described in Section 3.7, *Public Health and Safety*, and no impacts would occur.

#### **4.8 Surface Resources**

Topography. Determination of the significance of potential impacts to topography is based on the presence or absence of unique geologic features, landscapes, or landforms in areas that would be impacted by project implementation. An impact on topography would be considered significant if it would negatively affect unique geological features, landscapes or landforms. The topography of the project area is relatively level and no topographic features exist to inhibit

project implementation. In addition, no unique or sensitive landforms or topographic features occur in the project vicinity. Therefore, there would be no adverse impacts to topography.

Under implementation of the No Action Alternative, no ground-disturbing or excavating activities would occur and topographical conditions would remain as described in Section 3.8, *Surface Resources*. No adverse impacts would occur.

Soils. Construction proposed under the proposed action would involve trenching and/or boring and soil disturbance. A detailed geotechnical investigation will be conducted in order to determine the specific underlying geologic conditions along the project alignment, including soils on the site. The geotechnical investigation will include design specifications under the California State Building Code to address hazards related to on-site soils, such as liquefaction. During the course of project development, soils would be exposed or un-compacted and the potential for wind- and/or water-driven soil erosion would arise. Implementation of best management practices as required under the SWPPP, such as watering exposed soils and covering stockpiled soils, would ensure that impacts to soils during construction would be less than significant.

Project construction is expected to last approximately one year. Therefore, trenchless construction activities may take place during the rainy season and soil erosion may potentially occur. As a result of staging area preparation, trenchless construction, potential erosion and siltation impacts could occur. Implementation of mitigation measure GEO-1 would reduce potential soil erosion impacts to less than significant:

- GEO-1** In accordance with the SWPPP to be prepared under the State General Construction Permit, work crews will use approved erosion control measures including the use of gravel bags and construction of catch basins during grading operations. The project will implement short-term construction best management practices including applicable application protection erosion control measures.

During trenchless construction, caving during excavation could occur. Impacts associated with caving during excavation activities would be mitigated to less than significant by implementing mitigation measure GEO-2:

- GEO-2** All trenchless construction activities shall comply with OSHA and CALOSHA requirements. Excavated areas shall be shored or sloped back for stability. Trench shields may be used in place of shoring or sloping the excavation, provided that OSHA and CALOSHA requirements are followed. Any shoring designs shall be reviewed by the geotechnical engineer or other qualified personnel. Excavation conditions shall be checked in the field and adjusted as necessary.

Seismic. Potential impacts from seismic events include differential sediment due to improper fill or subsidence, and ground rupture, ground shaking, or liquefaction due to improper siting or non-compliance with seismic building codes. No known active faults traverse the project site.

Official data issued by the California Geological Survey indicates that portions of the project alignment fall within an Alquist-Priolo Fault Zone (YVWD/EPA 2006) (see Figure 8). The closest

faults to the proposed action include the San Jacinto Fault (City of San Bernardino 2005), Cherry Valley Fault and Banning Fault (City of Beaumont 2007). The Cherry Valley and Banning fault lines are located northeast of I-10 and within the boundaries of the city of Beaumont and Calimesa. The California Geological Survey has not reported the Cherry Valley Fault as active or potentially active. The proposed segments of the Cherry Valley Fault have, however, been designated by the County of Riverside and the City of Calimesa as a Fault Hazard Zone, as depicted on the Exhibit 5.2 of the Calimesa General Plan. Also, the western segment of the Banning fault which extends from the San Jacinto fault east to the Calimesa area is considered inactive because it does not break Quaternary alluvium. In fact, the fault zone in this area has no surface expression; the location of the fault has been inferred from gravity data and other indirect geological evidence (City of Calimesa 1994).

Implementation mitigation measure GEO-3 and GEO-4 would ensure that seismic hazards including rupture of a known fault would be reduced to a level of less than significant:

- GEO-3** The District shall perform design-level geotechnical investigations to evaluate the potential for liquefaction and seismic instability to affect the approved project and all associated facilities. Where these hazards are found to exist, appropriate engineering design and construction measures shall be incorporated into the project design. Specifically, this shall include measures such as the over-excavation of unsuitable base soils and geologic units, the proper composition, placement, and compaction of all construction fill, and the utilization of appropriate construction materials and methods.
  
- GEO-4** Design and construction shall be implemented under the direct supervision of a licensed civil engineer under consultation with a geotechnical engineer or engineering geologist as prescribed by the California Board of Consumer Affairs. These professionals shall be licensed in California by the California Board of Consumer Affairs.

As stated in mitigation measure GEO-3, a detailed geotechnical investigation will be conducted in order to determine the specific underlying geologic conditions along the project alignment. The proposed pipeline would be constructed in accordance with the California State Building Code (Title 24 of the California Administrative Code), which contains specifications to minimize adverse effects due to ground shaking from earthquakes and liquefaction. With the detailed geotechnical investigation and implementation of applicable building and construction standards, impacts to the proposed facilities resulting from geologic hazards are expected to be less than significant. Since this construction would be occurring in previously disturbed or developed area and would not include the development of housing or structures, potential impacts under the proposed action would be less than significant.

Under implementation of the No Action Alternative, geological and soil conditions would remain as described in Section 3.8, *Surface Resources*.

#### **4.9 Vegetation and Wildlife**

Biological resources surveys were conducted by Dudek biologists in October 2007 and December 2008 as described in the Biological Resources Letter Report (Appendix B). Surveys

were conducted to identify existing biological resources and potential biological constraints within the project footprint consisting of a 30-foot wide construction corridor located along the proposed alignments. In addition, areas within 500 feet of the proposed action were reviewed in the field to identify suitable habitat areas for potentially-occurring special-status wildlife species. Surveys were not conducted within the footprint of the proposed reverse-osmosis facility due to the site's developed nature and location within the existing developed footprint of the WRWRF. This discussion provides a summary of the findings included in the Biological Resources Technical Report (Dudek 2009).

Prior to conducting the field reconnaissance, a literature review was conducted to identify special-status biological resources present or potentially-present within the vicinity of the study area using the California Natural Diversity Data Base (CNDDDB) (CDFG 2007) and California Native Plant Society's (CNPS) *Online Inventory of Rare and Endangered Vascular Plants* (2007). General information regarding wildlife species in the region was obtained from American Ornithologists' Union (2006) for birds, Hall (1981) for mammals, Stebbins (2003) for reptiles and amphibians, and Emmel and Emmel (1973) for butterflies. General information regarding vegetation communities and plant species was obtained from Holland (1986) and Hickman (1993). In addition, the Biological Resources Technical Report (Dudek 2003) prepared for the District's Non-Potable Water Distribution System Project was reviewed to identify special-status species present within portions of San Timoteo Creek that are located adjacent to the proposed action.

#### Vegetation Communities

The proposed action is located entirely within existing roadways and disturbed/developed areas; no natural vegetation communities are present within the project footprint. The proposed action includes approximately 10.8 miles (57,000 feet) of pipeline located within existing roadways. A total of approximately 3.2 miles (16,700 feet) of pipeline would be outside existing roadways within disturbed/developed areas at three separate locations: (1) between Live Oak Canyon Road and the WRWRF (Figure 5a); (2) between the San Timoteo Canyon Road crossing over San Timoteo Creek and California Street (Figure 5b); and (3) between the western terminus of Van Leuven Street and East Carolina Street (Figure 5c).

At the Santa Ana River, the alignment includes approximately 2,300 feet to be constructed via directional drilling beneath portions of the Santa Ana River comprised of southern cottonwood-willow riparian forest and open channel. The directional drilling staging areas for the alignment include an approximately 0.24 acre area within a parking lot at the end of Hunts Lane and an approximately 0.27 acre disturbed/developed area adjacent to the City of San Bernardino golf course.

Inadvertent returns associated with directional drilling could result in indirect impacts to southern cottonwood-willow riparian forest and open channel present along the length of the bore under the Santa Ana River. Inadvertent returns could cause small amounts of bentonite drilling fluid and cuttings to be deposited within localized portions of the Santa Ana River. In order to reduce potential temporary indirect impacts to vegetation communities to less than significant, mitigation measure BIO-1 as described in Section 4.5, *Wetlands* above would be implemented.

Additionally, it is assumed that standard construction Best Management Practices (BMPs) and minimization measures to control construction-related dust, erosion, and runoff will be

implemented and will ameliorate these effects. During construction the project would be required to comply with applicable laws and regulations that address erosion and runoff, including the federal Clean Water Act, National Pollution Discharge Elimination System (NPDES), and would be required to prepare a SWPPP. Therefore, with adherence to applicable laws and regulations impacts to vegetation and wildlife would be less than significant.

### Wildlife

Wildlife affected by the proposed action is described in Section 4.10, Threatened and Endangered Species below. Regarding migratory birds, both federally listed and non-federally listed species, the proposed project is limited to existing roads and other disturbed/developed areas where potential habitat for breeding bird species protected under the Migratory Bird Treaty Act does not occur. However, potential habitat for burrowing owl was identified along the proposed project, as discussed in Section 4.10 below. Mitigation measure BIO-2 would mitigate potential impacts to burrowing owl, if present, through pre-construction surveys, breeding season avoidance, and the implementation of burrow replacement and passive exclusion by a qualified biologist. The only other migratory bird species with some potential to nest in the disturbed/developed portions in the project area is the killdeer (*Charadrius vociferous*), which may nest on the ground in unvegetated areas. Other breeding bird species protected under the Migratory Bird Treaty Act are not expected to occur due to a lack of suitable nesting habitat elsewhere within the project footprint. Implementation of mitigation measure BIO-2 as described below would ensure project compliance with the Migratory Bird Treaty Act. In addition, restrictions on construction during the breeding seasons of special-status species, as describe below, would further reduce the potential for indirect adverse impacts to nesting migratory birds.

If the No Action Alternative were selected, the proposed pipeline and reverse-osmosis facility would not be built and therefore, there would be no activities that result in ground-disturbance and either direct or indirect impacts to habitat or vegetation and terrestrial wildlife. Conditions would remain unchanged from those described in Section 3.9, *Vegetation and Wildlife*.

#### **4.10 Threatened and Endangered Species**

As stated above, the proposed action would be located primarily within existing paved roadways and developments where direct impacts to native plant communities and wildlife would not occur.

### Special-Status Plants

Based on the results of the literature search (CDFG 2007, CNPS 2007, Dudek 2003) as described in the Biological Resources Letter Report, no special-status plant species are known to occur within the project footprint. The project footprint is limited to existing disturbed/developed areas, and special-status plant species are not expected to occur within the project footprint. Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*), a state- and federally-listed endangered and CNPS List 1B species, is known to occur upstream of the proposed action and has a moderate potential to occur adjacent to the project within the Santa Ana River. Four CNPS List 1 or 2 species also have at least a moderate potential to occur adjacent to the project within the Santa Ana River, including Parish's gooseberry (*Ribes divaricatum* var. *parishii*), a CNPS List 1A species, San Bernardino aster (*Symphyotrichum defoliatum*), a CNPS List 1B species, bristly sedge (*Carex comosa*), a CNPS List 2 species, and

California satintail (*Imperata brevifolia*), a CNPS List 2 species. Potential temporary indirect impacts to special-status plants in the Santa Ana River due to inadvertent returns associated with directional drilling would be reduced to less than significant through the implementation of mitigation measure BIO-1.

### Special-Status Wildlife

Based on the results of the literature search (CDFG 2007, Dudek 2003), reconnaissance surveys and habitat assessments, no special-status wildlife species are known to occur within the project footprint. In general, the project footprint is limited to existing disturbed/developed areas and special-status wildlife species are not expected to occur. However, suitable habitat for burrowing owl (*Athene cunicularia*), a California Species of Concern, was identified along approximately 1,000 feet of the proposed action within existing disturbed areas near the WRWRF (Figure 3-1). No burrowing owl or burrowing owl sign were observed during the habitat assessment on December 30, 2008, but due to the presence of suitable burrow resources, direct impacts to burrowing owl could occur if present during construction. Potential direct impacts to burrowing owl would be avoided through implementation of the following mitigation measure:

- BIO-2** A preconstruction survey must be conducted by a qualified biologist within one week of intended construction. The survey must include a single morning and evening visit to the project limits (as shown on Figure 3-1) and an additional 500-foot buffer around the project limits (where legal access is provided). The survey will include a 100% walk over survey within the project limits to search all potential burrows for burrowing owl sign (i.e., feathers, white-wash, pellets, insect or small mammal remains). The remaining areas may be methodically surveyed by 10 meter transects. All burrows detected will be physically inspected for burrowing owl signs. In areas where legal access is not available, visual/audio survey methods are recommended to get as close to complete coverage as possible. Areas buffered from the construction by buildings or topography need not be surveyed.

If found to be occupied, construction should not occur during the breeding season (February 1 through August 31), particularly if burrows are located within the construction zone.

If burrowing owl burrows are detected within the construction zone, burrows will be replaced at a 2:1 ratio. Replacement burrows should be installed in suitable habitat as near to the project as feasible (although a 500-foot buffer is recommended). After the replacement burrows have been installed, passive exclusion of occupied burrows should commence by installing one-way doors at all occupied burrow entrances. These should be left in place for a period of three days prior to initiation of construction. After three days, the burrows should be carefully disassembled to verify that the owls were safely excluded. Burrow replacement and passive exclusion shall be implemented by a qualified biologist.

Vegetation communities that may support special-status wildlife species are located in various locations within 500 feet of the proposed action. Riversidean sage scrub is considered suitable

habitat for the federally-listed threatened California gnatcatcher (*Poliioptila californica*) and is present along portions of the project in Live Oak Canyon Road and San Timoteo Canyon Road. Native vegetation communities and land covers within the Santa Ana River include open channel, which is potential habitat for the federally listed threatened Santa Ana Sucker (*Catostomus santaanae*), and southern cottonwood-willow riparian forest, which is potential habitat for the state and federally listed endangered Least Bell's vireo and the state and federally listed endangered southwestern willow flycatcher. Although there are no records of Santa Ana sucker occurring in the Santa Ana River in the vicinity of the proposed action, there are records of Santa Ana sucker occurring along a 2 mile reach of the river approximately 3 miles downstream from the proposed action. If present, and if inadvertent returns associated with directional drilling occur within flowing portions of the Santa Ana River, potential temporary indirect impacts to Santa Ana sucker would be reduced to less than significant through implementation of mitigation measure BIO-3:

- BIO-3** Potential temporary indirect impacts to Santa Ana sucker due to inadvertent returns associated with directional drilling proposed at the Santa Ana River would be avoided by having a qualified biologist monitor all directional drilling activities in the river if flowing water is present during construction. If inadvertent returns occur where flowing water is present, all directional drilling activities will be immediately halted and adjustments made to the drilling process to prevent additional hydrofracture from occurring.

Suitable habitat for least Bell's vireo and southwestern willow flycatcher is also present in San Timoteo Creek within 500 feet of the proposed pipelines in San Timoteo Canyon Road. According to the Biological Resources Technical Report (Dudek 2003) prepared for the District's Non-Potable Water Distribution System Project, there are four pairs of least Bell's vireo within 500-feet of the proposed action at the intersection of San Timoteo Canyon Road and Live Oak Canyon Road. In addition, one southwestern willow flycatcher and a least Bell's vireo pair have been observed within 500 feet of the alignment along San Timoteo Canyon Road, west of Redlands Boulevard.

During the breeding season, construction-related noise could result in indirect impacts to the California gnatcatcher, least Bell's vireo and southwestern willow flycatcher if occupied habitat is located within 500 feet of the project footprint. In order to avoid indirect impacts to California gnatcatcher, least Bell's vireo and southwestern willow flycatcher due to construction-related noise, mitigation measure BIO-4 would be implemented:

- BIO-4** Potential indirect impacts to special-status wildlife that could occur adjacent to the proposed action due to construction-related noise would be avoided by restricting construction activities during the breeding season (February 15 through August 31 for gnatcatcher, April 10 through July 31 for vireo, and May 15 through July 15 for flycatcher) where suitable habitat areas are located within 500 feet. If construction adjacent to suitable habitat areas cannot be avoided during the breeding season, focused surveys would be required prior to construction to determine if adjacent habitat is occupied. If construction adjacent to occupied habitat during the breeding season is proposed, potential indirect impacts would be avoided by implementing noise

attenuation measures to ensure that noise levels within 500 feet of occupied habitat do not exceed an hourly average of 60 dBA.

If the No Action Alternative were selected, no pipeline and reverse-osmosis facility would be built and no direct or indirect impacts to habitat or threatened or endangered species would occur. Conditions would remain unchanged from those described in Section 3.10, *Threatened and Endangered Species*.

#### 4.11 Cultural Resources and Historic Property

ASM Affiliates, Inc. conducted a records search of cultural resources within 1/8-mile of the proposed action which is attached as Appendix C of this document (ASM 2009). The records search was conducted through the San Bernardino Museum Archaeological Information Center (AIC), and in addition a pedestrian survey of unpaved portions of the alignment was completed. The records search is included as Appendix C to this EA. Based on the records search, 39 cultural resources were identified within 1/8-mile of the proposed action, of which 26 are located adjacent to or cross the project alignment. Three of these resources are eligible for inclusion in the National Register of Historic Places (NRHP), one is potentially eligible, three are California Historical Landmarks (CHL), and three are California Points of Historical Interest (CPHI). No cultural resources were found within the unpaved portions of the project alignment. In addition, a Sacred Lands File search conducted by the Native American Heritage Commission did not indicate the presence of Native American cultural resources within 0.5 mile of the project area.

As the majority of the project is expected to occur within existing roadways, construction of the project is not likely to result in any damage to recorded cultural resources. All staging areas, access routes, and pipeline construction would be entirely contained within existing roadways when possible in order to avoid and minimize impacts to cultural resources. Construction that must occur outside of existing roadways would occur entirely within disturbed/developed areas.

While archaeological surveys have been carried out over the majority of the project alignment, much of Phase 1 has not undergone recent survey and could contain unrecognized cultural resources, including cultural artifacts affiliated with Native American tribes and individuals in the area. As a result, the following mitigation is provided to reduce potential impacts to less than significant.

- CUL-1** All ground disturbing activities during construction of the proposed action will be monitored by a qualified archaeologist to ensure avoidance. Any cultural resources discovered during construction will be tested to determine significance and mitigated through avoidance or data recovery. Should data recovery be necessary, it will be done as mandated by the National Historic Preservation Act (NHPA) and CEQA, and the Soboba Band of Luiseno Indians and other appropriate Tribes shall be consulted. Any artifacts or fossils impacted during construction will be repaired by the archaeological monitor to a point of identification and YVWD will pay potential curation fees.

The possibility exists of encountering unknown paleontological resources within the proposed action alignment. Implementation of mitigation measure CULT-2 would reduce impacts to paleontological resources to below a level of significance.

- CUL-2** The District shall use monitoring to ensure that if during construction any evidence of paleontological resources are uncovered, then all drilling/earth moving activity shall be halted, the District shall hire a qualified paleontologist to assess the situation and recommend appropriate measures. Upon review of the paleontologist's report, the District and the paleontologist, will determine the steps to be taken before construction may continue, but shall not allow any significant damage to occur to any paleontological resources.

Based on the report provided by ASM Affiliates, Inc., no records of cultural resources were identified. However, due to the sensitive nature of potential burials, the following mitigation measure (CULT-3) is recommended for implementation to reduce the impacts if human remains are discovered during site preparation.

- CUL-3** A qualified archeologist shall monitor all earth moving and excavation activities during construction of the proposed action. A Native American Monitor, assigned by the Soboba Band of Luiseno Indians, shall monitor all earth moving and excavation activities during construction of the proposed action. In the event human remains are discovered during construction, all excavation or ground disturbance in the vicinity of the find shall be halted and a coroner contacted. If the coroner determines that the remains are Native American, then the Native American Heritage Commission shall be contacted within 24 hours who will make recommendations on means of treating the remains. If other cultural resources are discovered, then testing shall be conducted to determine significance of the resource. Any significant resources should be avoided or recovered through a data recovery program.

Mitigation measures CUL-1 through CUL-3 would ensure impacts to cultural and historic resources would not be adverse under the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA).

Under implementation of the No Action Alternative, no construction and associated ground-disturbing activities would occur, therefore no impacts to cultural resources would occur and conditions would remain as described in Section 3.11, *Cultural Resources and Historic Properties*.

#### **4.12 Land Use and Infrastructure**

The proposed action would not result in any land use, as no change in land uses would be proposed as a result of project implementation, nor would a General Plan amendment be required. The proposed action would be located within the Cities of San Bernardino, Loma Linda, Redlands, and Yucaipa as well as unincorporated areas of San Bernardino County and Riverside County. Within these jurisdictions, the proposed action is designated as Residential, Industrial/Commercial, Learning Institutions, Vacant/Undeveloped, Parks, and Open Space. These designations include public utilities as an allowable use. All construction for the pipeline alignment would be located within existing roadways and disturbed/developed areas, and upon completion of construction, pipelines would be located underground; therefore, no homes or businesses would be displaced. The reverse-osmosis facility is planned to be constructed on the footprint of the existing WRWRF. While the project does not propose new land uses that

would permanently divide an established community, there would be disruptions to existing communities during construction. This disruption would be most apparent at residences located within the project vicinity, as well as educational institutions such as Bryman College, Loma Linda Academy, Loma Linda University, and Bryn Mawr Elementary School. In addition, Elmer Digno Park is located directly adjacent to the project alignment (see Figure 5c). Impacts during construction have the potential to result in land use disruptions due to increased noise and traffic, air quality impacts, and public safety issues. These impacts are analyzed individually in their respective sections of this document, and taken as a whole they result in a short-term impact to land use and planning.

In order to mitigate for potential impacts to existing neighborhoods or the educational and institutions and park facilities mentioned above during construction of the project, mitigation measures LU-1 and LU-2 would be implemented to ensure that short-term disruptions due to construction would result in a less than significant impact.

- LU-1** The District or its construction contractor shall provide advance notice, between two and four weeks prior to construction, by mail to all residents or property owners within 300 feet of the project site alignment. The announcement shall state specifically where and when construction will occur in the area. If construction delays of more than seven days occur, an additional notice shall be made, either in person or by mail.
- LU-2** On site notification of recreational access closures at least 30 days in advance shall be conducted through the posting of signs and/or notices at all public entrances and/or other areas of high visibility.

Additionally, the proposed action is not located within important farm land or within the coastal zone as delineated under the Farmland Protection Policy Act and Coastal Zone Management Act respectively.

Under implementation of the No Action Alternative, the proposed action would not be constructed. Conditions would remain unchanged from those described in Section 3.12, *Land Use and Infrastructure*.

#### **4.13 Aesthetics**

Construction activities would be temporary and limited to existing roadways and previously disturbed areas. These impacts would be short-term and not result in a significant impact to aesthetics. Long-term operation of the brineline and reverse-osmosis facility would not result in aesthetic impacts as the pipeline would be installed underground and the roads would be restored to their current conditions. The reverse-osmosis facility would be constructed within the existing developed footprint of the WRWRF. As a result, visual exposure under the proposed action would be temporary and minimal. Additionally, no portion of the proposed action is located within a wild and scenic river. Therefore, impacts to aesthetics would not be adverse.

Under implementation of the No Action Alternative, there would therefore be no changes to the aesthetic environment from conditions described in Section 3.13, *Aesthetics*.

#### 4.14 Socioeconomics

For project development, construction crews for the project would likely be hired from the available pool of workers in San Bernardino and Riverside Counties, resulting in an increase in short-term construction employment. No long-term employment would be generated from the proposed action. No significant impacts to socioeconomics would occur.

Under the No Action Alternative, socioeconomic conditions would remain as described in Section 3.14, *Socioeconomics* and no impacts would occur.

#### 4.15 Waste Management

Impacts associated with hazardous materials and wastes would be significant where the storage, use, or disposal of hazardous substances substantially increases the human health risk or environmental exposure. As discussed above under Section 4.7, *Public Health and Safety*, during construction and maintenance of the proposed pipeline relatively small amounts of hazardous substances, such as fossil fuels and lubricants, would be used on the site. These materials shall be transported and handled in accordance with all federal, state and local laws regulating the management and use of hazardous materials. Consequently, use of these materials for their intended purpose would not pose a significant risk to the public or environment, and impacts would be less than significant.

During construction solid waste would be recycled to the extent possible in accordance with applicable laws and regulations. Once construction is complete the proposed reverse-osmosis facility would utilize the following chemicals continuously during normal operation: threshold inhibitor (3 mg/L), sulfuric acid (30 mg/L), chlorine (5 mg/L), ammonia (1 mg/L), and lime (30 mg/L). Of these chemicals, sulfuric acid, ammonia, and lime would require new bulk deliveries, while the other chemicals would remain a part of existing bulk deliveries. Permitting of the use of such substances requires that adequate containment of the substances is provided to reduce the potential for release into the environment. These regulatory agencies have determined that compliance with the regulations governing the transport, storage, and use of these substances is adequate to mitigate the potential for release to a non-significant level. No mitigation other than compliance with applicable regulations is required. Therefore, impacts from the proposed pipeline to waste management would be less than significant.

Under the No Action Alternative, the proposed pipeline and reverse-osmosis facility would not be installed. Conditions would remain as described in Section 3.15, *Waste Management*.

#### 4.16 Transportation

Significance of potential transportation impacts is based on the level of anticipated disruption or improvement of current transportation patterns and systems; deterioration or improvement of existing levels of service; and changes in existing levels of transportation safety. The majority of the proposed action would be located under existing roadways in the developed areas of San Bernardino, Loma Linda, Redlands, and Yucaipa as well as unincorporated areas of San Bernardino County and Riverside County. See Section 2.1, *Project Location* for listed roadways.

During project construction, traffic will be generated. The primary sources of construction traffic would be workers, delivery of materials and removal of excess material. It would be necessary to close at least one lane of traffic in residential and commercial areas during construction. In the narrowest street sections, installation of the pipeline may require street closure to all but residents.

During construction of the proposed action, it is expected that the impacts on transportation and traffic would be significant and cause congestion and delays at intersections and on the street system. In order to reduce these short-term traffic impacts to less than significant, the following mitigation measures would be implemented:

- TRA-1** A traffic control plan shall be prepared by the District for approval by the Cities of San Bernardino, Loma Linda, Redlands, and Yucaipa as well as unincorporated areas of San Bernardino County and Riverside County. The traffic control plan shall show all signage, striping, delineate detours, flagging operations, and any other devices which will be used during construction to guide motorists safely through the construction zone and allow for a minimum of one lane of travel. The traffic control plan shall also include provisions for coordinating with local emergency service providers regarding construction times and locations of lane closures as well as specifications for bicycle lane and pedestrian safety. The District's construction contractors shall coordinate traffic diversions, street and lane closures, and obstruction of intersections with each of the jurisdictions prior to commencing construction activities through the development of routing and detour plans.

This traffic control plan shall be prepared in accordance with each of the jurisdictions traffic control guidelines and will be prepared to ensure that access will be maintained to individual properties, and that emergency access will not be restricted. Additionally, the Plan will ensure that congestion and delay of traffic resulting from project construction are not substantially increased and will be of a short-term nature.

The limits of construction of work area(s) and suggested alternate traffic routes for through traffic will be published in a local newspaper periodically throughout the construction period. In addition, the construction contractor shall provide not less than a 2-week written notice prior to the start of construction by mailing to owners/occupants along streets to be impacted during construction.

During construction, the District shall ensure that continuous, unobstructed, safe and adequate pedestrian and vehicular access to and from public facilities such as schools and parks. If normal access to these facilities is blocked by construction for more than four hours in any given work day, alternative access will be provided. The District shall coordinate with each facility's administrators in preparing a plan for alternative access.

During construction, the District shall maintain continuous vehicular and pedestrian access to residential driveways from the public street to the private property line, except where necessary construction precludes such continuous

access for reasonable periods of time. For example, when the pipeline is initially be excavated, access to the individual driveways may be closed during the course of a workday. Access will be reestablished at the end of the workday. If a driveway needs to be closed or interfered with as described above, the construction contractor shall notify the owner or occupant of the closure of the driveway at least five working days prior to the closure.

Methods to maintain safe, vehicular and pedestrian access includes the installation of temporary bridge or steel plates to cross over unfilled excavations. Whenever sidewalks or roadways are removed for construction, the District shall place temporary sidewalks or roadways promptly after backfilling until the final restoration has been made.

The traffic control plan shall include provisions to ensure that the construction contractor's work in any public street does not interfere unnecessarily with the work of other agencies such as emergency service providers, mail delivery, school buses and waste services.

The demand for parking will not be generated by the project once constructed. However, construction activities could affect parking for local residences and businesses. This impact would be limited in duration, and parking on surrounding streets could be used to offset parking temporarily displaced by construction activities. Implementation of mitigation measure TRA-2 would ensure that construction activities would have a less than significant impact to parking. While this measure would not alleviate any short-term parking loss, the advanced notice to affected individuals allows them to adjust their normal routine.

- TRA-2** The District shall post signage 24 hours in advance of trenching activities along affected streets to notify residences and businesses that might be inconvenienced by the proposed action.

Under the No Action Alternative conditions would remain unchanged from those described in Section 3.16, *Transportation*. Therefore, no impacts to transportation would occur.

#### **4.17 Energy**

Electricity is provided by Southern California Edison and the Southern California Gas Company provides natural gas services in the project region. The proposed action site is within existing roadways that do not generate demand for energy consumption. Operation of the reverse-osmosis facility would include mechanical equipment including four pumps with 400 horsepower motors; however, operation of the facility would not require substantial energy loads. Therefore, energy consumption by the proposed action would not result in adverse impacts.

Under the No Action Alternative, the proposed action would not be built and conditions would remain as described in Section 3.11, *Energy*. There would therefore be no changes to energy resources.

#### **4.18 Environmental Justice and Protection of Children**

The proposed action would extend the existing SARI pipeline by approximately 74,000 linear feet linear feet of existing roadways and install a reverse-osmosis treatment facility. No direct or indirect impacts from either construction- or operations-related activities are anticipated to affect low-income populations, minority populations, or children in the City or surrounding area. No significant short-term or long-term impacts are anticipated to occur; therefore, children and minority and low-income populations would not experience direct or indirect disproportionate impacts related to the proposed action.

Under the No Action Alternative, the proposed pipeline extension and reverse-osmosis facility would not be constructed. Conditions would remain as described in Section 3.18, *Environmental Justice and Protection of Children*.

#### **4.19 Cumulative Impacts**

Cumulative impacts on environmental resources result from incremental impacts of the proposed action when combined with other past, present and reasonably foreseeable future projects in an affected area. Cumulative impacts can result from minor but collectively substantial actions undertaken over a period of time by various agencies (Federal, state or local) or persons. In accordance with NEPA, cumulative impacts resulting from projects that are proposed, under construction, recently completed or anticipated to be implemented in the near future are discussed in this section. Implementation of the proposed action, if conducted simultaneously with other construction projects within the Counties of San Bernardino and Riverside, could cumulatively impact traffic, air quality, water quality, and noise in the immediate area; however impacts would be short-term and the use of best management practices and mitigation measures would reduce impacts to less than significant levels. Long-term cumulative impacts associated with the proposed action would be less than significant, as the pipeline would be installed underground and would require limited maintenance and energy to operate. Minimal worker maintenance trips would be required during the long-term operation of the reverse-osmosis facility. Furthermore, the proposed action would not result in any growth-inducing effects as it would not alter the capacity of existing water and wastewater services. Moreover, the project intent is to improve water quality through the removal of TDS and nitrogen through reverse-osmosis and convey byproduct brine waste directly to the Orange County Sanitation District's (OCSD) treatment plant for treatment prior to ultimate discharge into the Pacific Ocean. As such, cumulative adverse impacts would not occur.

#### **4.20 Selection of the Preferred Alternative**

Three primary screening criteria were used when evaluating the alternatives, including operational effectiveness (must meet the project *purpose and need*), feasibility and cost-effectiveness, and environmental constraints (minimal impacts to environmental and cultural resources). After evaluating each alternative against the three criteria, Alternative 1 was selected as the Preferred Alternative based on its effectiveness in improving water quality; conveying, treating and disposing of waste brine; and resulting in limited impacts with mitigation. Potential impacts to resources were evaluated and described in Sections 4-1 through 4-18. Table 4-3 provides a summary of the potential impacts for resource areas fully evaluated and associated with the Preferred Alternative, and the No Action Alternative.

**Table 4-3. Summary of Impacts for Fully Evaluated Resources**

Resource	Preferred Alternative (Alternative 1-The Proposed Action)	No Action Alternative
Air Quality	Combustion emissions associated with construction vehicles and equipment would be minimal due to the short-term duration of proposed construction. Fugitive dust emission would be minimized through dust control and standard engineering practices. Impacts would not be adverse.	Conditions would remain as described in <i>Section 3.1, Air Resources</i> . No impacts would occur.
Noise	Construction-related noise impacts would be minimal and temporary, would comply with all applicable laws and regulations, and would not continue beyond the period of construction. There would be no long term adverse noise impacts.	Conditions would remain as described in <i>Section 3.2, Noise</i> . No impacts would occur.
Odor	Construction related odors may occur but would be minimal and temporary. There would be no long term odors associated with the proposed action. Impacts would not be adverse.	Conditions would remain as described in <i>Section 3.3, Odor</i> . No impacts would occur.
Water Resources	With adherence to applicable laws and regulations, such as implementation of a SWPPP for the project construction period, and implementation of mitigation measures HYDRO-1 through HYDRO-4, impacts to water resources would not be adverse.	Conditions would remain as described in <i>Section 3.4, Water Resources</i> . No impacts would occur.
Wetlands	The project vicinity contains a number of waterways. Potential indirect impacts to nearby wetlands during construction would be reduced to less than significant levels through implementation of a SWPPP in accordance with all applicable laws and regulations, and mitigation measure BIO-1 which would reduce impacts resulting from directional drilling. Therefore impacts to wetlands would not be adverse.	Conditions would remain as described in <i>Section 3.5, Wetlands</i> . No impacts would occur.
Floodplains	The proposed action would place a portion of the project within a 100-year floodplain. However, this would not result in a flood hazard to people or structures. Therefore, impacts would not be adverse.	Conditions would remain as described in <i>Section 3.6, Floodplains</i> . No impacts would occur.
Public Health and Safety	As all standard hazardous materials would be handled, transported and stored according to federal and state regulations, impacts related to operational-related hazardous materials would not be adverse. The proposed action would not product hazardous waste and would not result in a risk to public health and safety. Several sites were documented as being located in close proximity to the project alignment; therefore mitigation measures HAZ-1 through HAZ-3 would be implemented to ensure adverse impacts related to contaminated soils do not occur.	Conditions would remain as described in <i>Section 3.7, Public Health and Safety</i> . . No impacts would occur.

**Table 4-3. Summary of Impacts for Fully Evaluated Resources**

Resource	Preferred Alternative (Alternative 1-The Proposed Action)	No Action Alternative
Surface Resources	No significant landforms or areas of unique or sensitive resources would be impacted by construction. All construction would occur in previously disturbed areas. Mitigation measures GEO-1 through GEO-4 would ensure impacts related to soil disturbance and faulting would not be adverse. Surface resource impacts would not be adverse.	Conditions would remain as described in <i>Section 3.8, Surface Resources</i> . No impacts would occur.
Vegetation and Wildlife	Construction would occur in previously disturbed areas. No habitat of significant magnitude or sensitivity would be directly impacted by construction activities. Indirect impacts would be addressed through implementation of mitigation measures BIO-2 through BIO-4, and would not result in adverse impacts.	Conditions would remain as described in <i>Section 3.9, Vegetation and Wildlife</i> . No impacts would occur.
Threatened and Endangered Species	Construction would occur in previously disturbed areas; however, habitat for sensitive species (California gnatcatcher and burrowing owls) is near the project area. Implementation of identified mitigation would not result adverse impacts.	Conditions would remain as described in <i>Section 3.10, Threatened and Endangered Species</i> . No impacts would occur.
Cultural Resources and Historic Property	Proposed pipeline would be built in previously disturbed roadways where cultural resources are not anticipated but may occur. Proposed mitigation would ensure impacts would not be adverse.	Conditions would remain as described in <i>Section 3.11, Cultural Resources and Historic Properties</i> . No impacts would occur.
Land Use and Infrastructure	Proposed pipeline would be built in previously disturbed roadways. With mitigation measures LU-1 and LU-2 implemented, impacts would not be adverse.	Conditions would remain as described in <i>Section 3.12, Land Use and Infrastructure</i> . No impacts would occur.
Aesthetics	Construction activities would cause temporary limited aesthetic impacts. Once constructed the proposed pipeline would be beneath existing roadways and would not result in aesthetic impacts. Therefore, impacts would not be adverse.	Conditions would remain as described in <i>Section 3.13, Aesthetics</i> . No impacts would occur.
Socioeconomics	The proposed action would result in temporary benefits to socioeconomics by creating some short-term construction jobs. Once construction is complete the project would not impact socioeconomic conditions. Impacts would not be adverse.	Conditions would remain as described in <i>Section 3.14, Socioeconomics</i> . No impacts would occur.
Waste Management	Construction activities would produce limited amounts of construction related waste. Once constructed the project would not generate waste, other than relative to limited maintenance activities. With compliance with all applicable laws and regulations impacts relating to waste management would not be adverse.	Conditions would remain as described in <i>Section 3.15, Waste Management</i> . No impacts would occur.

**Table 4-3. Summary of Impacts for Fully Evaluated Resources**

Resource	Preferred Alternative (Alternative 1-The Proposed Action)	No Action Alternative
Transportation	Some short-term access may be restricted during construction; however, impacts would be minimized using standard engineering and traffic management practices as described in mitigation measures T-1 and T-2. No long-term impacts would occur.	Conditions would remain as described in <i>Section 3.16, Transportation</i> . No short- or long-term impacts would occur.
Energy	The proposed action would result in limited increased energy usage associated with a pump station. Impacts would not be adverse.	Conditions would remain as described in <i>Section 3.17, Energy</i> . No short- or long-term impacts would occur.
Environmental Justice and Protection of Children	The proposed action is not anticipated to disproportionately impact low-income or minority populations, or children in the surrounding area. Therefore, impacts would not be adverse.	Conditions would remain as described in <i>Section 3.18, Environmental Justice and Protection of Children</i> . No impacts would occur.

#### 4.21 Unavoidable Adverse Impacts

Implementation of the proposed action would result in temporary, minor adverse environmental impacts such as fugitive dust emissions, vehicle emissions, noise, traffic disruption, water quality degradation, and soil disturbance.

There would be no unavoidable adverse impacts associated with the No Action Alternative.

#### 4.22 Relationship of Short-Term and Long-Term Productivity

In the short-term, implementation of the proposed action would result in temporary, adverse impacts such as fugitive dust emissions, vehicle emissions, noise, traffic disruption, water quality degradation, and soil erosion. Long-term effects of the proposed action would include improved water quality and effective waste brine conveyance, treatment and disposal.

The No Action Alternative would not result in adverse impacts, short- or long-term, as the pipeline extension and reverse-osmosis facility would not be built and the pipeline alignment would remain as it is currently.

#### 4.23 Irreversible and Irretrievable Commitments of Resources

Since construction associated with the proposed action would occur along existing roads and previously disturbed areas, no irreversible or irretrievable commitments of resources in the US pertaining to these alternatives would occur.

#### 4.24 Conclusion

This EA has been prepared in accordance with NEPA requirements. The EA reviews potential impacts of proposed 74,000 linear feet of brineline within existing roadways in the Cities of San Bernardino, Loma Linda, Redlands, and Yucaipa as well as unincorporated areas of San Bernardino County and Riverside County, California, on environmental resources and concludes that with mitigation there are **no significant adverse impacts on the environment** resulting from the implementation of the proposed action.

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## **SECTION 6 LIST OF PREPARERS**

This report was prepared by Dudek. Members of the professional staff are listed below:

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**APPENDIX A**

**YUCAIPA BRINELINE ENVIRONMENTAL RECORDS SEARCH**



## MEMORANDUM

December 19, 2008

To : Kam Muri, Environmental

From : Glenna McMahon, Hydro/HazWaste  
Susan Smith, Hydro/HazWaste

RE : Yucaipa Brineline Environmental Records Search for the  
Proposed Pipeline Route

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Dudek reviewed a regulatory database search report conducted by Environmental FirstSearch (November 10, 2008) for the linear alignment scheduled to be constructed as shown in Figure 1. The Environmental FirstSearch report (Attachment A) listed 212 sites that were located within the search distances specified for each database. One hundred and sixty-two sites were located within ½ mile of the proposed linear alignment.

Ninety-five unique locations, some with multiple businesses, were mapped directly along or within ½ mile of the proposed linear alignment (pipeline). These businesses are listed in the following databases:

- Leaking Underground Storage Tank (LUST)
- Potential or confirmed contaminated properties (OTHER)
- San Bernardino County Hazardous Materials Permits (PERMITS)
- Resource Conservation and Recovery Act Generator (RCRAGN)
- Solid Waste Landfill (SWL)
- Underground Storage Tanks (UST)

The LUST database contains listings of properties with known releases. The OTHER database contains listings of potential or confirmed contaminated properties. The SWL database contains listings of properties currently or formerly used as solid waste landfills. The remaining databases - PERMITS, RCRAGEN, and UST - contain listings predominantly related to permitting. Therefore, the LUST, OTHER, and SWL cases are the ones of most concern along the proposed alignment.

### Properties Located Along the Path of the Proposed Pipeline

Two businesses located directly along the proposed linear alignment were listed in the LUST database. The following information was obtained from the Environmental FirstSearch Report and GeoTracker, the Regional Water Quality Control Board's online database.

- Truck O Mat (1955 Hunts Lane, San Bernardino). A release of diesel fuel was reported on August 26, 1991. The drinking water aquifer was impacted. The case is open.
- Matlock Transportation (550 E. Caroline Street, San Bernardino). A release of gasoline was reported on October 30, 1998. Soil was impacted. The case is closed and a closure letter was issued on August 4, 1999.

The two LUST cases discussed above are located along the proposed linear alignment and present the greatest concern for the project. There is potential for hydrocarbon-impacted soil to exist within the subsurface at these properties. Dudek recommends that a work plan be prepared to address the identification, management, and disposal of impacted soil, if encountered, during the project construction. Worker health and safety should be addressed in a health and safety plan. Dudek recommends that air monitoring for hydrocarbons be conducted during construction near any gas station sites located along the linear alignment.

One address located directly along the proposed linear alignment was listed in the OTHER database. The following information was obtained from the Environmental FirstSearch Report.

- Single Family Residence (28565 San Timoteo Canyon Road, Redlands). A clandestine drug laboratory reportedly operated at the residence. The property was seized on October 25, 2004. No further information was available.

Although the OTHER database depicts a property located directly along the linear alignment, a review of local maps suggest that the residence in question is located approximately 0.39 miles south of the proposed route. In addition, the property was seized in 2004 and is not likely to impact the project.

The SWL database listed one address located directly along the proposed linear alignment. The following information was obtained from the Environmental FirstSearch Report.

- One Stop Landscape Supply Center (13024 San Timoteo Canyon Road, Redlands). A landscaping supply company reportedly operates a composting facility at the address. They are permitted to accept 500 tons per day of agricultural solids and wood waste. The permit is active as of March 4, 1994. The SWL database indicates that the facility is inspected monthly.

The facility listed in the SWL database is located within 100 feet of the proposed linear alignment. A review of satellite images suggests that the composting operations are conducted on the southwest portion of the property, away from the project area. Although the operations are likely located away from the project area, Dudek recommends that a work plan be prepared to address the identification, management, and disposal of impacted soil, if encountered, during the project construction. Worker health and safety should be addressed in a health and safety plan. Dudek recommends that air monitoring for hydrocarbons be conducted during construction near any gas station sites located along the linear alignment.

#### Properties Located within ½ Mile of the Proposed Pipeline

Eighty-three locations, some with multiple businesses, were mapped within ½ mile of the proposed linear alignment. The businesses are listed in the following databases:

- LUST
- OTHER
- PERMITS
- RCRAGN
- SWL
- UST

Of the above databases, the LUST, OTHER, and SWL databases list businesses with known concerns or releases. A total of 21 businesses were listed in the LUST, OTHER, and SWL databases. Three additional sites were identified in the Regional Water Quality Control Board (GeoTracker) and the Department of Toxic Substances Control (EnviroStor) online databases. Information for each of the 24 listings is provided below.

US EPA ARCHIVE DOCUMENT

Name	Address	Location Relative to Proposed Alignment (miles)	Database	Details of Database Listing	Current Condition
Terminal Stations, Inc.	2300 Steel Rd., Colton	0.02 W	LUST	Gasoline release reported on 2/6/89. Aquifer impacted.	Case Open
South Gardena WTS	2373 S. Gardena St., San Bernardino	0.11 NW	SWL	Waste tire location	Case Closed (date not reported)
ARCO 5214	305 Redlands Blvd., San Bernardino	0.12 NW	LUST	Gasoline release reported on 7/27/89. Aquifer impacted.	Case Open
San Timoteo Sanitary Landfill	San Timoteo Canyon Rd., Redlands	0.16 SW	SWL	Disposal facility for agricultural, construction, and demolition waste; dead animals; bio solids.	Active
Eric Realty Inc.	495 Commercial Rd., San Bernardino	0.22 SW	OTHER	DTSC evaluation site. No impacts reported.	Not Reported
Waterman Landfill	NE of Intersection of Waterman Ave and I-10, San Bernardino	0.23 NW	SWL	Solid waste disposal site (unknown contents).	Facility Closed on 12/31/60
TOSCO/76 Station 4975	1950 S. Waterman Ave., San Bernardino	0.28 NW	LUST	Gasoline release reported on 7/14/98. Aquifer impacted.	Case Open
LLUMC-Power Plant	11100 Anderson St., Loma Linda	0.28 SW	LUST	Diesel release reported on 9/20/94. Soil	Case Open

Name	Address	Location Relative to Proposed Alignment (miles)	Database	Details of Database Listing	Current Condition
				impacted.	
Waterman Shell Station	1930 Waterman Ave., San Bernardino	0.33 NW	LUST	Gasoline releases reported on 6/7/89 and 12/14/01. Aquifer impacted.	1989 Case Closed on 6/18/91; 2001 Case Open
Midway Garage	24732 Redlands Blvd., Loma Linda	0.37 NE	LUST	Gasoline release reported on 7/13/87. Soil impacted.	Case Closed on 2/23/88
Jerry Pettis VA Hospital	11202 Benton St., Loma Linda	0.39 SE	LUST	Diesel release reported on 3/5/93. Soil impacted.	Case Closed on 3/27/98
Turner Storage	24779 Redlands Blvd., Loma Linda	0.41 NE	LUST	Gasoline release reported on 4/10/91. Aquifer impacted.	Case closed on 9/6/00
ARCO 5205	25715 Redlands Blvd., Redlands	0.41 NW	LUST	Gasoline release reported on 9/8/93. Soil impacted.	Case closed on 6/11/03
Holiday Oldsmobile	1388 E St., San Bernardino	0.42 NW	LUST	Gasoline release reported on 5/9/89. Aquifer impacted.	Case Closed on 3/31/97
Crafton Motors (Former)	25694 Redlands Blvd., Loma Linda	0.42 NW	LUST	Gasoline release reported on 2/18/97. Soil impacted.	Case Closed on 9/11/01
Circle K	2505 S. Waterman Ave., San Bernardino	0.42 SE	LUST	Gasoline release reported on 6/8/93. Soil impacted.	Case Closed on 8/30/93
D.A. Mitchell Company	24230 Barton Rd., Loma Linda	0.42 SW	LUST	Gasoline release reported on 2/10/99. Soil	Case Closed on 11/19/99

Name	Address	Location Relative to Proposed Alignment (miles)	Database	Details of Database Listing	Current Condition
				impacted.	
Redlands Community Hospital	350 Terrancia Blvd., Redlands	0.45 NE	LUST	Diesel release reported on 12/21/98. Soil impacted.	Case Closed 5/17/99
U.S. Post Office	1341 S. E St., San Bernardino	0.47 NW	LUST	Gasoline release reported on 2/5/87. Soil impacted.	Case Closed on 2/23/87
Loma Linda Medical Center	11234 Anderson St., Loma Linda	0.47 SW	LUST	Diesel release reported on 11/18/93. Soil impacted.	Case Closed on 7/1/96
Bell Brand/Sunshine Biscuits	24831 W. Redlands Blvd., Loma Linda	0.48 NE	LUST	Solvent release reported on 11/21/88. Aquifer impacted.	Case Closed on 9/6/96
Bear Oil Co./Former Texaco	24913 Redlands Blvd., Loma Linda	0.49 NE	LUST	Gasoline release reported on 6/28/99. Aquifer impacted.	Case Open
Unocal 2417	24891 W. Redlands Blvd., Loma Linda	0.50 NE	LUST	Gasoline release reported on 7/29/87. Aquifer impacted.	Case Open
Chevron #9-2789	24910 Redlands Blvd., Loma Linda	0.50 NE	LUST	Gasoline release reported on 7/11/90. Aquifer impacted.	Case Closed on 8/27/97

Eight of the businesses (ARCO 5214, TOSCO/76 Station 4975, LLUMC Power Plant, Waterman Shell Station, Bear Oil Co./Former Texaco, Unocal 2417, San Timoteo Canyon Sanitary Landfill, and Terminal Stations Inc.) are active or have open cases. Five of the 8 businesses are approximately ½ mile from the proposed linear alignment and therefore are unlikely to impact the environmental conditions along the proposed alignment. The three remaining sites (ARCO

5214, San Timoteo Canyon Landfill, and Terminal Stations Inc.) are located within 0.16 miles of the proposed linear alignment.

The Terminal Stations, Inc. property is located 0.02 miles west of the proposed linear alignment. Documents reviewed for the site suggest that the impacted areas of the site are 0.05 miles west of Hunts Lane, near the former location of underground storage tanks (UST); a site map depicted the former USTs approximately 280 feet southwest of the proposed pipeline. An October 2007 report shows that the local depth to groundwater was approximately 26 feet below ground surface with a flow direction to the south/southwest. Based on the location of the impacted groundwater and the reported direction of groundwater flow, it is not likely that this site has impacted the environmental conditions at the proposed linear alignment. However, due to the close proximity to the proposed pipeline, Dudek recommends that a work plan be prepared to address the identification, management, and disposal of impacted soil, if encountered, during the project construction. Worker health and safety should be addressed in a health and safety plan.

The ARCO 5214 station is located 0.12 miles northwest of the proposed linear alignment. Based on a February 2008 Confirmation Soil Boring report for the site, gas range organics (GRO) in excess of 1,000 milligrams per kilogram are present in the soil in the northwest portion of the property between 5 and 25 feet below ground surface. According to figures presented in the March 2008 report the northernmost portion of the plume is approximately 10 feet south of the Redlands Boulevard curb line. Thus, it is possible that petroleum hydrocarbon impacted soil could be encountered if excavating in this area. Dudek recommends that a work plan be prepared to address the identification, management, and disposal of impacted soil, if encountered, during the project construction. Worker health and safety should be addressed in a health and safety plan. Dudek recommends that air monitoring for hydrocarbons be conducted during construction near any gas station sites located along the linear alignment.

The San Timoteo Canyon Landfill is located 0.16 miles southwest of the proposed linear alignment. The landfill has been operated by San Bernardino County since 1980. The facility is designated Class III – a landfill for non-hazardous solid waste. According to information provided by the California Solid Waste Information System online database, the facility is permitted to accept the following waste: agricultural, construction/demolition, dead animals, industrial, bio-solids, and mixed municipal. The northernmost edge of the landfill (closest to

the proposed pipeline route) is located approximately 0.92 miles southwest of the project site and is not likely to impact the environmental conditions at the project site.

The TOSCO/76 Station 4975 is located 0.28 miles northwest of the proposed linear alignment. The Geotracker database reports a release in July 1998 that impacted groundwater with gasoline and fuel oxygenates. An April 2008 Operations and Maintenance report shows that there are 10 groundwater monitoring wells on-site and 4 off-site. The 2<sup>nd</sup> Quarter 2008 Groundwater Monitoring Report shows the depth to water at approximately 27 feet below ground surface with a gradient of 0.05 ft/ft to the west. In addition, none of the samples analyzed contained VOCs at or above the laboratory reporting limits. An ozone injection system is currently being used on-site for groundwater remediation. Based on the distance from the proposed pipeline route and the groundwater flow direction (west), it is unlikely that this site has impact the environmental conditions at the project site.

The LLUMC Power Plant is located 0.28 miles southwest of the proposed linear alignment. The Geotracker database reports a release of diesel fuel at this site in September 1994, which impacted the soil. An August 2008 report (the only report available on GeoTracker) shows that 4 boreholes were converted to monitoring wells at this site. These wells were gauged in June 2008 and all were reported to be dry. Previously, these wells were gauged in October 2006 and water levels were reported at approximately 106 feet below ground surface; 0.02 feet of hydrocarbons was reported in one of the wells. Based on this information, the report indicated a groundwater gradient range of 0.03 ft/ft to 0.12 ft/ft to the south-southeast. No additional gauging or historical analytical data were presented in this report. Based on the location of this property (southwest of the proposed pipeline route) and the groundwater flow direction (south-southeast), it is unlikely that this site has impact the environmental conditions at the project site.

The Waterman Shell Station is located 0.33 miles northwest of the proposed linear alignment. The Geotracker database reports releases at the site have impacted groundwater with gasoline and fuel oxygenates. The 1<sup>st</sup> Quarter 2008 Groundwater Monitoring Report shows the local depth to groundwater at approximately 23 feet below ground surface. Closure for the vadose zone at the site was requested in April 2008. A Work Plan containing historical groundwater monitoring data was submitted in October 2008. The highest concentrations of methyl-tert butyl ether (MTBE) and tert-butyl alcohol (TBA)

reported in groundwater samples collected during the 3<sup>rd</sup> Quarter 2008 monitoring event were 22 µg/L and 1,000 µg/L, respectively. This report indicated a groundwater gradient of 0.01 ft/ft to the north-northwest. Based on the location of this property (north of the proposed pipeline route) and the groundwater flow direction (north-northwest), it is unlikely that this site has impacted the environmental conditions at the project site.

The Bear Oil Co./Former Texaco site is located 0.49 miles northeast of the proposed linear alignment. The Geotracker database reports a gasoline release at the site in June 1999. The case status is listed as Open – Site Assessment 11/20/06; no documents were available for review on the database. Although no information was available for this property, data was available for an adjacent property located 0.01 miles to the south (Unocal 2417). Based on the data for that site (discussed below), and the distance of this site to the proposed pipeline, it is unlikely that this site has impacted the environmental conditions at the project site.

The Unocal 2417 site is located 0.50 miles northeast miles of the proposed linear alignment. The Geotracker database reports a gasoline release that impacted groundwater in July 1987. The case status is listed as Open – Remediation 5/1/08. A December 2007 Remediation Status Report indicates that a dual-phase extraction remediation system is currently being used at the site. The 3<sup>rd</sup> Quarter Monitoring Report shows the depth to groundwater starting at 38 feet below ground surface. The groundwater gradient range is 0.04 ft/ft northwest to 0.03 ft/ft southwest (previous reports document a flow direction to the north-northwest). The analytical data for this sampling event report maximum concentrations of TPH as gasoline, MTBE, and benzene at 52,000 µg/L, 95 µg/L, and 13 µg/L, respectively. The wells located on the south and southwest portions of the property were either dry or samples did not contain VOCs at or above the laboratory reporting limits. Figures depicting the center of the contamination plume place it at the northwestern portion of the property, the location of the former USTs. Based on the distance to the proposed pipeline route, groundwater flow direction, monitoring and analytical data for downgradient wells, and location of the contamination plume, the release associated with this property is not likely to impact the environmental conditions at the project site.

Whether the cases are open, closed, active, or inactive, all 24 sites should be identified on a figure in the work plan and health and safety plan.

### Unmapped Sites

Forty-four "non-geocoded" locations, some with multiple listings, were documented in the Environmental FirstSearch report. Non-geocoded locations are categorized as such due to inadequate address information. These locations were listed in the following directories:

- Emergency Response Notification System (ERNS)
- VCP Federal Engineering and Institutional Controls (Fed IC/EC)
- LUST
- OTHER
- PERMITS
- RCRA/N
- Spill Reports made to Federal Authorities (SPILLS)
- SWL
- UST
- Voluntary cleanup program (VCP)

Of the above databases, the LUST, OTHER, SPILLS, ERNS, and SWL databases list businesses with known concerns or releases. A total of 17 unique businesses/locations were listed in the LUST, OTHER, SPILLS, ERNS, and SWL databases. Two of the locations (San Timoteo Canyon Landfill and One Stop Landscaping Supply) were mapped and discussed in previous section of this document. Three of the 17 locations may be within one mile of the linear alignment.

- Union Pacific Railroad (San Timoteo Canyon, Redlands) is listed on the ERNS database for a diesel fuel spill (unknown quantity) to the land on July 8, 1998.
- Loma Linda University Medical Center (1333 Anderson Rd., Loma Linda) is listed in the LUST database for a heater fuel release on 11/18/93. The soil was impacted. A closure letter for the incident was issued on 7/1/96.
- Jorco Chemical Co. (32185 E. Outer Highway I-10, Redlands) is listed in the SPILLS database for a non-petroleum solvent release on 12/15/92. According to EnviroStro, the chemicals released include: styrene, butyl acrylate, methyl acrylate, and methyl methacrylate. Jorco Chemical Co. joined the DTSC VCP on 11/5/08.

Based on the information provided for these releases, it is unlikely that they will impact the environmental conditions along the proposed linear alignment.

#### Alternate Pipeline Route

The alternate route for the pipeline does not identify additional sites present in the database searches. The alternate route intersects with the Truck O Mat site (1955 Hunts Lane, San Bernardino) and 0.06 miles west of the Terminal Stations site (2300 Steel Road, Colton). The alternate route provides a greater buffer from the Terminal Stations site, however, as stated earlier, this site is not likely to impact the environmental conditions at the project site. However, Dudek recommends that a work plan be prepared to address the identification, management, and disposal of impacted soil, if encountered, during the project construction. Worker health and safety should be addressed in a health and safety plan.

#### Summary

Based on a review of the Environmental FirstSearch report, GeoTracker, and EnviroStor, it appears that 5 of the properties listed in the regulatory database search may have impacted the environmental conditions along the linear alignment. Dudek recommends that all of the properties discussed in this memorandum be identified in a work plan prepared prior to construction for this project. The properties of concern are:

- Truck O Mat (1955 Hunts Lane, San Bernardino) - petroleum hydrocarbons;
- Matlock Transportation (550 E. Caroline Street, San Bernardino) – petroleum hydrocarbons;
- One Stop Landscape Supply Center (13024 San Timoteo Canyon Road, Redlands) – combustible gasses;
- Terminal Stations, Inc. (2500 Steel Road, Colton) – petroleum hydrocarbons; and
- ARCO # 5214 (305 Redlands Boulevard, San Bernardino) – petroleum hydrocarbons.

The work plan should address identification, management, and disposal of hydrocarbon- and volatile organic compound (VOC)-impacted soil. Dudek recommends that air monitoring for hydrocarbons be addressed in the work plan. Worker health and safety, when dealing with hydrocarbon- and VOC-impacted soils and combustible gases, should be addressed in a health and safety plan.

Aerial photographs were not reviewed for this project, therefore, Dudek did not review the current and historical land use. The majority of the pipeline route appears to be along existing roadways, and therefore in areas previously impacted by construction. There are several areas where the pipeline route crosses what appears to be undeveloped land. These areas are:

- The northwestern end of the pipeline and alternate route, south of the Santa Ana River;
- An area west of Artesia Street, adjacent to agricultural property;
- The north-south segment south of the Barton Road and California Street intersection; and
- The roughly east-west segment covering the area from Live Oak Canyon Road to the eastern end of the pipeline.

These areas should be evaluated prior to the commencement of construction activities to identify potential hazards, such as pesticides, herbicides, illegally dumped materials, or any other conditions that may affect the health and safety of workers and other members of the community. Dudek recommends reviewing historical aerial photos of the proposed pipeline route to determine past and present land use and to specifically determine areas within the proposed alignment that are/were used for agriculture. If it is determined that there are areas within the proposed alignment that are/were used for agriculture, soil in those areas should be tested to evaluate the potential presence of pesticides and herbicides. If pesticides and/or herbicides are found to be present in the soil above acceptable regulatory concentrations, the work plan should address the identification, management and disposal of pesticide and/or herbicide containing soil. In addition, the health and safety plan should be amended to appropriately manage worker health and safety when exposed to pesticides and herbicides.

**APPENDIX B**

**BIOLOGICAL RESOURCES LETTER REPORT**



February 5, 2009

3163-12

Mr. Joseph Zoba  
Yucaipa Valley Water District  
12770 Second Street  
Yucaipa, California 92399

***Subject: Biological Resources Letter Report, Yucaipa Valley Water District Regional Brineline Extension Project, Riverside and San Bernardino Counties, California***

Dear Mr. Zoba:

This letter report documents the results general biological resources surveys completed by Dudek biologists in October 2007, and most recently in December 2008, for the proposed Yucaipa Valley Water District (District) Regional Brineline Extension Project located primarily in the County of San Bernardino, California.

This letter report is intended to: (1) describe the existing conditions of biological resources within the project site in terms of vegetation, flora, wildlife, and wildlife habitats; (2) discuss potential impacts to biological resources that would result from development of the project; and (3) recommend mitigation measures for potential impacts to special-status biological resources, if necessary.

## **1.0 INTRODUCTION**

### **1.1 Project Location**

The proposed extension of the Santa Ana Regional Interceptor (SARI) (i.e., Proposed Project) is located within the cities of San Bernardino, Redlands, Mentone, Yucaipa, Colton, and Loma Linda, as well as unincorporated areas of San Bernardino County and Riverside County (Figures 1 and 2). The Proposed Project lies within the South San Bernardino, Redlands, Sunnymead, Yucaipa, El Casco and Beaumont U.S. Geological Survey (USGS) 7.5 minute quadrangles (Figure 2). The Proposed Project would be located within developed areas in which the pipeline would be placed primarily within roadways and existing disturbed/developed areas.

Mr. Joseph Zoba

Subject: *Biological Resources Letter Report, Yucaipa Valley Water District Regional Brineline Extension Project, Riverside and San Bernardino Counties, California*

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## 1.2 Project Description

The District currently supplies water, wastewater, and recycled water services to the cities of Yucaipa and Calimesa, as well as to unincorporated areas of Riverside and San Bernardino counties. Wastewater is currently conveyed and treated at the District's Wochholz Regional Water Recycling Facility (WRWRF). The District intends to utilize reverse-osmosis at existing and planned water filtration and wastewater treatment facilities to achieve advanced fresh water as a renewable resource.

A byproduct of reverse-osmosis is waste brine, comprising of highly concentrated minerals and salts, which must be disposed of in order to protect basin water quality and comply with basin water quality objectives set by the Regional Water Quality Control Board (RWQCB). In order to provide disposal of waste brine and excess non-reclaimable wastewater, the District is proposing to extend the existing SARI pipeline into the Yucaipa Valley (Figure 3). This is referred to as the District's Regional Brineline Extension Project and will allow waste brine and excess non-reclaimable wastewater to be conveyed directly to Orange County for treatment and eventual disposal into the Pacific Ocean. The existing SARI system transports non-reclaimable wastewater (waste brine and industrial wastewater) from Orange, Riverside and San Bernardino counties to Orange County Sanitation District's (OCSD) Regional Treatment Plant No. 2 in Huntington Beach prior to discharge into the Pacific Ocean.

The Proposed Project involves extending the existing SARI pipeline by approximately 14 miles (74,000 linear feet), primarily using a 12-inch gravity pipeline with pressurized segments as needed. The pipeline would be constructed of High Density Polyethylene (HDPE) and manholes would be spaced along the pipeline as appropriate.

The Proposed Project would primarily be installed using conventional trenching methods. Trenchless construction methods including directional drilling or jack and bore would be used where conventional trenching is not feasible (i.e., railroad and highway crossings), or where trenchless construction is necessary to avoid significant impacts to biological resources (i.e., creek crossings). At existing bridge crossings, pipelines would be hung directly from the bridge if feasible. All construction activities would occur within a temporary 30-foot-wide construction corridor along the proposed alignment. In addition, temporary staging areas required during construction for equipment and materials storage or at entry and exit points during trenchless construction activities would be located within the 30-foot-wide construction corridor. At the Santa Ana River, the Proposed Project would be constructed using directional drilling to cross beneath the river. The Proposed Project includes the Phase 3 Alternative Alignment that crosses the Santa Ana River near South E Street to the west of the preferred

Mr. Joseph Zoba

Subject: *Biological Resources Letter Report, Yucaipa Valley Water District Regional Brineline Extension Project, Riverside and San Bernardino Counties, California*

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alignment in Hunts Lane. Both alignments and the associated directional drilling staging areas are evaluated as part of the project footprint.

## **2.0 METHODS**

### **2.1 Literature Review**

Prior to conducting the field reconnaissance, a literature review was conducted to identify special-status biological resources present or potentially-present within the vicinity of the study area using the California Natural Diversity Data Base (CNDDDB) (CDFG 2007) and California Native Plant Society's (CNPS) *Online Inventory of Rare and Endangered Vascular Plants* (2007). General information regarding wildlife species in the region was obtained from American Ornithologists' Union (2006) for birds, Hall (1981) for mammals, Stebbins (2003) for reptiles and amphibians, and Emmel and Emmel (1973) for butterflies. General information regarding vegetation communities and plant species was obtained from Holland (1986) and Hickman (1996). In addition, the Biological Resources Technical Report (Dudek 2003) prepared for the District's Non-Potable Water Distribution System Project was reviewed to identify special-status species present within portions of San Timoteo Creek that are located adjacent to the Proposed Project.

### **2.2 Field Reconnaissance**

A general reconnaissance survey of the Proposed Project was conducted by Dudek biologists Kamarul Muri and Patricia Schuyler on October 1, 2007. A habitat assessment for burrowing owl (*Athene cunicularia*), a California Species of Concern, along unpaved portions of the proposed alignment was conducted by Dudek biologist Paul Lemons on December 30, 2008. Surveys were conducted to identify existing biological resources and potential biological constraints within the project footprint. The project footprint consists of a 30-foot wide construction corridor located along the proposed alignment, as well as temporary staging areas associated with proposed directional drilling at the Santa Ana River. In addition, areas within 500 feet of the Proposed Project were reviewed in the field to identify suitable habitat areas for potentially-occurring special-status wildlife species. The project footprint was also surveyed to identify the locations of jurisdictional waters, including wetlands, regulated by the U.S. Army Corps of Engineers, the California Regional Water Quality Control Board and the California Department of Fish and Game (CDFG). The Proposed Project is located primarily within existing roadways; therefore, focused surveys for special-status plant or wildlife species were not conducted.

Mr. Joseph Zoba

Subject: *Biological Resources Letter Report, Yucaipa Valley Water District Regional Brineline Extension Project, Riverside and San Bernardino Counties, California*

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### **3.0 PHYSICAL CHARACTERISTICS**

#### **3.1 Environmental Setting**

The Proposed Project is located in the foothills of the San Bernardino Mountains, and the San Bernardino National Forest is located to the east. The area is characterized by series of alluvial valleys and upland hills and ridges and is generally bounded by Crafton Hills and Yucaipa Ridge to the north and the Badlands and San Timoteo Canyon to the south. The region has been subject to geologic uplift as a result of local faulting associated with the San Andreas Fault. These local faults include the Banning Fault, Oak Glen Fault, and Chicken Hill Fault. The region has also been shaped by numerous creeks; most notable are San Timoteo Creek and the Santa Ana River.

#### **3.2 Site Description**

The Yucaipa Valley Regional Brineline Extension Project occurs within existing roadways and disturbed/developed areas surrounded by residential and commercial development, agricultural areas and open space. The Santa Ana River is located at the northern limit of the project immediately south of the City of San Bernardo wastewater treatment facility. A portion of the Proposed Project occurs within San Timoteo Canyon Road, which runs roughly parallel to and south of the Union Pacific Railroad and San Timoteo Creek, and is surrounded mostly by orchards and open fields and hillsides.

### **4.0 RESULTS**

#### **4.1 Vegetation Communities and Land Covers**

The Proposed Project is located entirely within existing roadways and disturbed/developed areas; no natural vegetation communities are present within the project footprint. The Proposed Project includes approximately 10.8 miles (57,000 feet) of pipeline located within existing roadways. A total of approximately 3.2 miles (16,700 feet) of pipeline would be outside existing roadways within disturbed/developed areas at four separate locations: (1) approximately 3,300 feet between Live Oak Canyon Road and the WRWRF (Figure 3a); (2) approximately 7,500 feet between the San Timoteo Canyon Road crossing over San Timoteo Creek and California Street (Figure 3b); (3) approximately 4,000 feet between the western terminus of Van Leuven Street and East Carolina Street (Figure 3c); and (4) approximately 1,100 feet between South Sunwest Court and the directional drilling staging area at the Santa Ana River crossing for the Phase 3 Alternative Alignment (Figure 3d).

Mr. Joseph Zoba

Subject: *Biological Resources Letter Report, Yucaipa Valley Water District Regional Brineline Extension Project, Riverside and San Bernardino Counties, California*

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At the Santa Ana River, the Proposed Project includes two alternatives that would utilize directional drilling to construct the pipeline beneath the river (Figure 3d). The preferred alignment and the Phase 3 Alternative Alignment include approximately 2,300 feet and 2,900 feet of pipeline, respectively, to be constructed via directional drilling beneath portions of the Santa Ana River comprised of southern cottonwood-willow riparian forest and open channel. The directional drilling staging areas for the preferred alignment includes an approximately 0.24-acre area within a parking lot at the end of Hunts Lane and an approximately 0.27-acre disturbed/developed area adjacent to the City of San Bernardino golf course. The directional drilling staging areas for the Phase 3 Alternative Alignment include an approximately 0.48-acre disturbed area in the western portion of a vacant lot off South Sunwest Court and a 0.36-acre disturbed/developed area adjacent to a public storage facility.

## 4.2 Special-Status Biological Resources

### 4.2.1 Special-Status Plants

Based on the results of the literature search (CDFG 2007, CNPS 2007, Dudek 2003), no special-status plant species are known to occur within the project footprint. The project footprint is limited to existing disturbed/developed areas, and special-status plant species are not expected to occur. Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*), a state- and federally-listed endangered and CNPS List 1B species, is known to occur upstream of the proposed project and has a moderate potential to occur adjacent to the project within the Santa Ana River. Four CNPS List 1 or 2 species also have at least a moderate potential to occur adjacent to the project within the Santa Ana River, including Parish's gooseberry (*Ribes divaricatum* var. *parishii*), a CNPS List 1A species, San Bernardino aster (*Symphotrichum defoliatum*), a CNPS List 1B species, bristly sedge (*Carex comosa*), a CNPS List 2 species, and California satintail (*Imperata brevifolia*), a CNPS List 2 species.

### 4.2.2 Special-Status Wildlife

Based on the results of the literature search (CDFG 2007, Dudek 2003), reconnaissance surveys and habitat assessments, no special-status wildlife species are known to occur within the project footprint. In general, the project footprint is limited to existing disturbed/developed areas and special-status wildlife species are not expected to occur. However, suitable habitat for burrowing owl, a California Species of Concern, was identified along approximately 1,000 feet of the Proposed Project within existing disturbed areas near the WRWRF (Figure 4). No burrowing owl or burrowing owl sign were observed during the habitat assessment, but the area is considered suitable due to the presence of suitable burrows associated with California ground squirrel (*Spermophilus beecheyi*).

Mr. Joseph Zoba

Subject: *Biological Resources Letter Report, Yucaipa Valley Water District Regional Brineline Extension Project, Riverside and San Bernardino Counties, California*

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Vegetation communities that may support special-status wildlife species are located in various locations within 500 feet of the Proposed Project. Riversidean sage scrub is considered suitable habitat for the federally-listed threatened California gnatcatcher (*Poliopitila californica*) and is present along portions of the project in Live Oak Canyon Road and San Timoteo Canyon Road. Native vegetation communities and land covers within the Santa Ana River include southern cottonwood-willow riparian forest, which is potential habitat for the state- and federally listed endangered Least Bell's vireo (*Vireo belli pusillus*) and the state- and federally listed endangered southwestern willow flycatcher (*Empidonax traillii extimus*), and open channel, which is potential habitat for the federally-listed threatened Santa Ana Sucker (*Catostomus santaanae*). Although there are no records of Santa Ana sucker occurring in the Santa Ana River in the vicinity of the Proposed Project, there are records of Santa Ana sucker occurring along a 2 mile reach of the river approximately 3 miles downstream from the Proposed Project.

Suitable habitat for least Bell's vireo and southwestern willow flycatcher is also present in San Timoteo Creek within 500 feet of the proposed pipelines in San Timoteo Canyon Road. According to the Biological Resources Technical Report (Dudek 2003) prepared for the District's Non-Potable Water Distribution System Project, there are four pairs of least Bell's vireo within 500 feet of the Proposed Project at the intersection of San Timoteo Canyon Road and Live Oak Canyon Road. In addition, one southwestern willow flycatcher and a least Bell's vireo pair have been observed within 500 feet of the alignment along San Timoteo Canyon Road, west of Redlands Boulevard.

#### **4.2.3 Jurisdictional Waters and Wetlands**

Jurisdictional waters and wetlands regulated by ACOE pursuant to Section 404 of the federal Clean Water Act, by RWQCB pursuant to Section 401 of the federal Clean Water Act and Porter-Cologne Act, and by CDFG pursuant to Section 1600 et seq. of the California Fish and Game Code do not occur within the project footprint. However, portions of the Proposed Project are adjacent to or cross jurisdictional waters and/or wetlands. In most cases, pipeline crossings over jurisdictional waters and/or wetlands would occur within or alongside existing roads and bridges. However, the pipeline crossings at the Santa Ana River would utilize directional drilling to construct the pipeline beneath the river. Entry and exit points for the directional drilling activities at the Santa Ana River would be located within upland areas outside of jurisdictional water or wetlands (Figure 3d).

US EPA ARCHIVE DOCUMENT

Mr. Joseph Zoba

Subject: *Biological Resources Letter Report, Yucaipa Valley Water District Regional Brineline Extension Project, Riverside and San Bernardino Counties, California*

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The Proposed Project includes a total of six crossings over jurisdictional waters within or tributary to Live Oak Canyon Creek, San Timoteo Creek and the Santa Ana River. Table 1 gives the location and type of each crossing and the waterway crossed.

**Table 1**  
**Creek Crossings**

Location of Crossing	Name of Waterway	Existing Crossing
Live Oak Canyon Road	Live Oak Creek	Bridge
Live Oak Canyon Road	San Timoteo Creek	Bridge
California Street	San Timoteo Creek	None
Van Leuven Street	San Timoteo Creek	Bridge
Hunts Lane	Santa Ana River	None
S. Sunset Court	Santa Ana River	None

#### **4.3 Wildlife Corridors and Habitat Linkages**

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that function as stepping stones for wildlife dispersal.

The project area includes several stream channels and creeks that could potentially serve as wildlife corridors or habitat linkages. The Santa Ana River and San Timoteo Creek located along the majority would be considered important wildlife corridors and habitat linkages. The Santa Ana River provides a major east-west corridor and habitat linkage that connects regional wildlands and natural open space areas. San Timoteo Creek is tributary to the Santa Ana River and connects important habitat areas to the north and south. In addition, San Timoteo Canyon is identified as a proposed linkage in the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Conservation Area connecting habitat along the Santa Ana River with proposed habitat cores to the south of San Timoteo Creek (Riverside, County of 2003).

#### **4.4 Regional Resources Planning Context**

A small portion of the Proposed Project at the intersection of Live Oak Canyon Road and San Timoteo Canyon Road lies within the Western Riverside County MSHCP study area. The *Draft Western Riverside MSHCP* (Riverside, County of 2003) and an accompanying Environmental Impact Report/Environmental Impact Statement was submitted for public review in November 2002 and was adopted on June 17, 2003. The MSHCP proposes coverage for 146 species, including the conservation of approximately 500,000 acres within western Riverside County,

US EPA ARCHIVE DOCUMENT

*Mr. Joseph Zoba*

*Subject: Biological Resources Letter Report, Yucaipa Valley Water District Regional Brineline Extension Project, Riverside and San Bernardino Counties, California*

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comprised of 347,000 acres of existing public/quasi-public lands and 153,000 acres of new conservation on private lands. As discussed above, San Timoteo Canyon is a proposed linkage of the MSCHP Conservation Area.

The MSHCP is a comprehensive habitat conservation planning program, the goal of which is the establishment of conservation areas in conformance with the Natural Community Conservation Plan (NCCP) Act of 1991, codified in Fish and Game Code Sections 2800–2835. The NCCP Act is a State of California effort to protect important vegetative communities and their dependent wildlife species. The purpose of an NCCP is to protect natural communities and species, while allowing a reasonable amount of economic development. The NCCP process provides an alternative to protecting species on a single “species basis” as in the federal and state Endangered Species Acts (ESAs). Under the NCCP Act, the CDFG is responsible for implementing process planning and conservation guidelines for NCCP programs. Local governments and landowners may then prepare the NCCPs so that they comply with both the federal and California ESAs. The first program under the NCCP Act addressed coastal sage scrub habitat and the species that inhabit or use coastal sage scrub, focusing on coastal sage scrub habitat protection and the preparation of NCCPs within Southern California, including portions of Los Angeles, San Bernardino, Riverside, San Diego and Orange counties.

## **5.0 ANTICIPATED PROJECT IMPACTS**

This section addresses direct, indirect, and cumulative impacts to biological resources that would result from implementation of the Proposed Project.

### ***Direct Impacts***

For the purposes of this assessment, direct impacts were quantified by evaluating resources within the impact footprint of the Proposed Project, which is defined by a 30-foot-wide construction corridor located along the proposed alignment. The project footprint also includes temporary staging areas associated with directional drilling proposed at the Santa Ana River. Direct impacts due to pipeline construction and temporary directional drilling staging areas are considered to be temporary and would be restored to pre-existing conditions following construction. Direct impacts due to construction of the reverse-osmosis facility at the WRWRF are considered permanent.

### ***Indirect Impacts***

Indirect impacts result primarily from adverse “edge effects,” and may be short-term in nature, related to construction, or long-term in nature, associated with development in proximity to biological resources within natural open space. During construction activities, short-term indirect

Mr. Joseph Zoba

Subject: *Biological Resources Letter Report, Yucaipa Valley Water District Regional Brineline Extension Project, Riverside and San Bernardino Counties, California*

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impacts may include dust, which could disrupt plant vitality, construction-related soil erosion and water runoff; and noise and lighting, which may disrupt wildlife. It is assumed, however, that standard construction Best Management Practices (BMPs) and minimization measures to control construction-related dust, erosion, and runoff will be implemented and will ameliorate these effects. All project construction will be subject to the typical restrictions and requirements that address erosion and runoff, including the federal Clean Water Act, National Pollution Discharge Elimination System (NPDES), and preparation of a Stormwater Pollution Prevention Plan.

In addition, temporary indirect impacts could also result from hydrofracture associated with directional drilling that is proposed at the Santa Ana River. Hydrofracture during directional drilling could cause inadvertent returns at the surface along the length of the drill bore. Inadvertent returns would consist of bentonite drilling fluid and cuttings that can be released from the drill bore. Drilling fluids are typically 97% water and only 3% bentonite, a naturally occurring clay mineral that is nontoxic. In general, inadvertent returns associated with directional drilling affect only a very limited area on the surface, typically on the order of a few square feet. The potential effects of inadvertent returns would be similar to the potential effects of siltation, and would primarily be a concern for water quality if located within a flowing stream channel.

### ***Cumulative Impacts***

Cumulative impacts refer to incremental individual environmental effects of two or more projects when considered together. These impacts taken individually may be minor but collectively significant as they occur over a period of time. The indirect impacts associated with this project are relatively minor and therefore do not greatly contribute to cumulative impacts for the surrounding area.

## **5.1 Vegetation Communities and Land Covers**

### ***Direct Impacts***

The Proposed Project would not result in direct impacts to natural vegetation communities. The Proposed Project would impact 74,000 feet (14 miles) of disturbed/developed lands.

### ***Indirect Impacts***

Indirect impacts to vegetation communities and land covers are expected to be the same as those described above in Section 5.0. It is assumed, however, that the majority of potential indirect impacts to special-status vegetation communities located adjacent to the Proposed Project will be avoided through the use of standard construction BMPs and minimization measures to control construction-related dust, erosion, and runoff.

Mr. Joseph Zoba

Subject: *Biological Resources Letter Report, Yucaipa Valley Water District Regional Brineline Extension Project, Riverside and San Bernardino Counties, California*

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Inadvertent returns associated with directional drilling could result in temporary indirect impacts to special-status vegetation communities along the length of the bore across the Santa Ana River. Inadvertent returns could cause small amounts of bentonite drilling fluid and cuttings to be deposited within southern cottonwood-willow riparian forest and/or open channel areas in the Santa Ana River and could be considered significant.

## 5.2 Special-Status Plants

### *Direct Impact*

No direct impacts to special-status plants are expected to occur because the Proposed Project is located within existing disturbed/developed areas.

### *Indirect Impacts*

Potential indirect impacts special-status plants are expected to be similar to those described above in Section 5.0. It is assumed, however, that potential indirect impacts to special-status plant species will be avoided through the use of standard construction BMPs and minimization measures to control construction-related dust, erosion, and runoff.

Inadvertent returns associated with directional drilling could result in temporary indirect impacts to special-status plants that may be present along the length of the bore across the Santa Ana River. Inadvertent returns could cause small amounts of bentonite drilling fluid and cuttings to be deposited within localized portions of the Santa Ana River where special-status plant species could occur. Temporary indirect impacts due to inadvertent returns could be considered significant.

## 5.3 Special-Status Wildlife

### *Direct Impacts*

No direct impacts to special-status animals are expected to occur because the Proposed Project is located within existing disturbed/developed areas. However, suitable habitat for burrowing owl is located along approximately 1,000 feet of alignment near the WRWRF. No burrowing owl or burrowing owl sign were observed during a site visit on December 30, 2008, but due to the presence of suitable burrow resources, direct impacts to burrowing owl could occur if present during construction.

### *Indirect Impacts*

During the breeding season, construction-related noise could result in indirect impacts to the California gnatcatcher, least Bell's vireo and southwestern willow flycatcher if occupied habitat

*Mr. Joseph Zoba*

*Subject: Biological Resources Letter Report, Yucaipa Valley Water District Regional Brineline Extension Project, Riverside and San Bernardino Counties, California*

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is located within 500 feet of the project footprint. However, potential indirect impacts due to noise would be avoided by restricting construction adjacent to potential habitat during the breeding season (February 15 through August 31 for gnatcatcher; April 10 through July 31 for vireo, and May 15 through July 15 for flycatcher). If construction adjacent to suitable habitat areas were to take place within the breeding season, indirect impacts due to noise could be considered significant.

As discussed above, inadvertent returns associated with directional drilling could result in the localized deposition of bentonite drilling fluid and cuttings within the Santa Ana River. Potential indirect impacts to special-status avian and terrestrial fauna that could occur within the Santa Ana River are not likely to occur and are not considered significant. Potential temporary indirect impacts to special-status aquatic species, including the federally-listed threatened Santa Ana sucker, could occur as a result of temporary degradation in water quality and could be considered significant.

#### **5.4 Jurisdictional Waters/Wetlands**

##### ***Direct Impacts***

Direct impacts to jurisdictional areas are not expected to occur as a result of the Proposed Project. At the majority of crossings, pipeline will be placed directly within the existing roadways or hung alongside existing bridge crossings. However, where this is not feasible, trenchless construction methods (directional drilling or jack and bore) would be used to cross under the jurisdictional areas. Trenchless construction methods would involve entry and exit points located within the 30-foot-wide construction corridor, and would not directly impact jurisdictional waters or wetlands.

##### ***Indirect Impacts***

Potential indirect impacts to jurisdictional areas are expected to be similar to those described above in Section 5.0. Potential indirect impacts to jurisdictional areas will be avoided through the use of standard BMPs and minimization measures to control construction-related dust, erosion, and runoff. All project construction will be subject to the typical restrictions and requirements that address erosion and runoff, including the federal Clean Water Act, NPDES, and preparation of a Stormwater Pollution Prevention Plan.

As discussed above, temporary indirect impacts from inadvertent returns associated with directional drilling could affect water quality if located within a flowing stream channel in the Santa Ana River. Temporary indirect impacts would be limited to only a temporary degradation in water quality but could be considered significant.

Mr. Joseph Zoba

Subject: *Biological Resources Letter Report, Yucaipa Valley Water District Regional Brineline Extension Project, Riverside and San Bernardino Counties, California*

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## 5.5 Wildlife Corridors and Habitat Linkages

All proposed construction and staging will take place within existing roadways and disturbed/developed areas; therefore, no direct or indirect impacts to wildlife corridors and habitat linkages located in the vicinity of the project are expected to occur. The Santa Ana River, San Timoteo Creek, and other smaller streams and creeks along the Proposed Project likely function as habitat linkages and corridors for wildlife movement. However, as described above, direct impacts to these resources will be avoided by using trenchless construction methods or by hanging pipeline alongside existing bridge crossings.

## 6.0 MITIGATION

### *Vegetation Communities*

Potential indirect impacts that could occur to vegetation communities and land covers within the Santa Ana River due to inadvertent returns associated with directional drilling would be minimized through immediate containment and/or clean-up, as well as monitoring and quantification of impact. Depending on the amount of material, the inadvertent return may be removed. If it needs to be removed, the material would be removed by hand tools. The area would be accessed by whatever means were feasible (i.e., on foot, by boat, etc.).

### *Special-Status Plants*

Potential indirect impacts that could occur to special-status plants within the Santa Ana River due to inadvertent returns associated with directional drilling would be minimized through immediate containment and/or clean-up, as well as monitoring and quantification of impact, as described above.

### *Special-Status Wildlife*

Potential direct impacts that could occur to burrowing owl if present during construction would be avoided through the completion of preconstruction surveys, burrow replacement, and passive relocation prior to construction as described below.

A preconstruction survey must be conducted within one week of intended construction. The survey must include a single morning and evening visit to the project limits and an additional 500-foot buffer around the project limits (where legal access is provided). The survey will include a 100% walk over survey within the project limits to search all potential burrows for burrowing owl sign (i.e., feathers, white-wash, pellets, insect or small mammal remains). The remaining areas may be methodically surveyed by 10 meter transects. All burrows detected will be physically inspected for burrowing owl sign. In areas where legal access is not available,

*Mr. Joseph Zoba*

*Subject: Biological Resources Letter Report, Yucaipa Valley Water District Regional Brineline Extension Project, Riverside and San Bernardino Counties, California*

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visual/audio survey methods are recommended to get as close to complete coverage as possible. Areas buffered from the construction by buildings or topography need not be surveyed.

If found to be occupied, construction should not occur during the breeding season (February 1 through August 31), particularly if burrows are located within the construction zone.

If burrowing owl burrows are detected within the construction zone, burrows will be replaced at a 2:1 ratio. Replacement burrows should be installed in suitable habitat as near to the project as feasible (although a 500-foot buffer is recommended). After the replacement burrows have been installed, passive exclusion of occupied burrows should commence by installing one-way doors at all occupied burrow entrances. These should be left in place for a period of three days prior to initiation of construction. After three days, the burrows should be carefully disassembled to verify that the owls were safely excluded.

Potential indirect impacts to Santa Ana sucker due to inadvertent returns associated with directional drilling proposed at the Santa Ana River would be avoided by having a qualified biologist monitor all directional drilling activities in the river if flowing water is present during construction. If inadvertent returns occur where flowing water is present, all directional drilling activities will be immediately halted and adjustments made to the drilling process to prevent additional hydrofracture from occurring.

Potential indirect impacts to special-status wildlife that could occur adjacent to the Proposed Project due to construction-related noise would be avoided by restricting construction activities during the breeding season (February 15 through August 31 for gnatcatcher, April 10 through July 31 for vireo, and May 15 through July 15 for flycatcher) where suitable habitat areas are located within 500 feet. If construction adjacent to suitable habitat areas cannot be avoided during the breeding season, focused surveys would be required prior to construction to determine if adjacent habitat is occupied. If construction adjacent to occupied habitat during the breeding season is proposed, potential indirect impacts would be avoided by implementing noise attenuation measures to ensure that noise levels within 500 feet of occupied habitat do not exceed an hourly average of 60 dBA.

#### ***Jurisdictional Waters and Wetlands***

Potential indirect impacts that could occur to jurisdictional waters and wetlands within the Santa Ana River due to inadvertent returns associated with directional drilling would be minimized through immediate containment and/or clean-up, as well as monitoring and quantification of impact, as described above.

Mr. Joseph Zoba

Subject: *Biological Resources Letter Report, Yucaipa Valley Water District Regional Brineline Extension Project, Riverside and San Bernardino Counties, California*

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Please contact me if you have any questions regarding this report at 760.479.4292 or kmuri@dudek.com.

Sincerely,



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Kamarul Muri  
Biologist  
Environmental Sciences Division

KM/lmb

Att: *Figures 1-2, 3a-3d, 4*

cc: *Scott Goldman, Water 3 Engineering*  
*Tom Falk, Dudek*  
*Paul Lemons, Dudek*

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*Mr. Joseph Zoba*

*Subject: Biological Resources Letter Report, Yucaipa Valley Water District Regional Brineline Extension Project, Riverside and San Bernardino Counties, California*

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**APPENDIX C**

**CULTURAL RECORDS SEARCH AND SURVEY RESULTS**



STATE OF CALIFORNIA

Arnold Schwarzenegger, Governor

**NATIVE AMERICAN HERITAGE COMMISSION**

915 CAPITOL MALL, ROOM 364  
SACRAMENTO, CA 95814  
(916) 653-6251  
Fax (916) 657-5390  
Web Site [www.nahc.ca.gov](http://www.nahc.ca.gov)  
dn\_nahc@pacbell.net



April 13, 2009

Kamarul Muri, Project Manager

**DUDEK**

605 Third Street  
Encinitas, CA 92024

Sent by FAX to: 760-479-4198

No. of Pages: 3

Re: Request for a Sacred Lands File records search and Native American Contacts list for Yucaipa Valley Water District Regional Brineline Extension Project, located in Riverside and San Bernardino Counties, California

Dear Kamarul Muri:

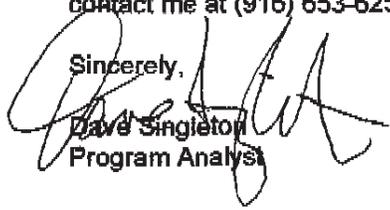
The Native American Heritage Commission (NAHC) was able to perform a record search of its Sacred Lands File (SLF) for the affected project area (APE). The SLF search did not indicate the presence of Native American cultural resources within one-half mile of the project area (APE or 'area of potential effect).

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the names of the nearest tribes that may have knowledge of cultural resources in the project area. We recommend that you contact persons on the attached list of Native American contacts. A Native American tribe or individual may be the only source of information about a cultural resource. They may have specific knowledge as to whether or not the known cultural resources identified may be at-risk by the proposed project. The attached list is normally used for tribal consultation purposes as required by the National Historic Preservation Act, Section 106, NEPA and State of California environmental review.

Lead agencies should consider avoidance, as defined in Section 15370 of the California Environmental Quality Act (CEQA) when significant cultural resources could be affected by a project. Also, Public Resources Code Section 5097.98 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Discussion of these should be included in your environmental documents, as appropriate.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

  
Dave Singleton  
Program Analyst

Attachment: Native American Contact List

**Native American Contact**  
**Riverside & San Bernardino Counties**  
**April 13, 2009**

**Pechanga Band of Mission Indians**  
**Paul Macarro, Cultural Resource Center**  
**P.O. Box 1477 Luiseno**  
**Temecula , CA 92593**  
**(951) 308-9295 Ext 8106**  
**(951) 676-2768**  
**(951) 506-9491 Fax**

**Alvino Siva**  
**2034 W. Westward Cahuilla**  
**Banning , CA 92220**  
**(951) 849-3450**

**Ramona Band of Cahuilla Mission Indians**  
**Joseph Hamilton, Chairman**  
**P.O. Box 391670 Cahuilla**  
**Anza , CA 92539**  
**admin@ramonatribe.com**  
**(951) 763-4105**  
**(951) 763-4325 Fax**

**Santa Rosa Band of Mission Indians**  
**John Marcus, Chairman**  
**P.O. Box 609 Cahuilla**  
**Hemet , CA 92546**  
**srtribaloffice@aol.com**  
**(951) 658-5311**  
**(951) 658-6733 Fax**

**San Manuel Band of Mission Indians**  
**James Ramos, Chairperson**  
**26569 Community Center Drive Serrano**  
**Highland , CA 92346**  
**(909) 864-8933**  
**(909) 864-3724 - FAX**  
**(909) 864-3370 Fax**

**Morongo Band of Mission Indians**  
**Michael Contreras, Cultural Heritage Prog. Manager**  
**13000 Fields Road Cahuilla**  
**Banning , CA 92220 Serrano**  
**(951) 755-5025**  
**(951)201-1866 - cell**  
**(951) 922-0105 Fax**

**Soboba Band of Mission Indians**  
**Robert Salgado, Chairperson**  
**P.O. Box 487 Luiseno**  
**San Jacinto , CA 92581**  
**dhill@soboba-nsn.gov**  
**(951) 654-2765**  
**(951) 654-4198 - Fax**

**San Manuel Band of Mission Indians**  
**Ann Brierty, Policy/Cultural Resources Department**  
**26569 Community Center. Drive Serrano**  
**Highland , CA 92346**  
**abrierty@sanmanuel-nsn.gov**  
**(909) 864-8933 EXT-3250**  
**(909) 649-1585 - cell**  
**(909) 862-5152 Fax**

**This list is current only as of the date of this document.**

**Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.**

**This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Yucaipa Valley Water District Regional Brinelline Extension Project; located in Riverside and San Bernardino counties, California for which a Sacred Lands File search and Native American Contacts list were requested.**

**Native American Contact**  
**Riverside & San Bernardino Counties**  
**April 13, 2009**

**Morongo Band of Mission Indians**

Robert Martin, Chairperson

11581 Potrero Road Cahuilla

Banning, CA 92220 Serrano

Robert\_Martin@morongo.org

(951) 849-8807

(951) 755-5200

(951) 922-8146 Fax

**Serrano Nation of Indians**

Goldie Walker

6588 Valaria Drive Serrano

Highland, CA 92346

(909) 862-9883

**Soboba Band of Luiseno Indians**

Erica Helms, Cultural Resources Manager

P.O. Box 487 Luiseno

San Jacinto, CA 92581

dhill@soboba-nsn.gov

(951) 654-2765

FAX: (951) 654-4198

**Cahuilla Band of Indians**

Luther Salgado, Sr.

PO Box 391760 Cahuilla

Anza, CA 92539

tribalcouncil@cahuilla.net

915-763-5549

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Yucaipa Valley Water District Regional Brinelline Extension Project; located in Riverside and San Bernardino counties, California for which a Sacred Lands File search and Native American Contacts list were requested.

Soboba Cultural Resource Department  
P.O. Box 487 San Jacinto, Ca 92581  
Phone: 951.654.5544 ext. 4137



April 27, 2009

Attn: Don Laylander  
Senior Archaeologist  
2034 Corte Del Nogal  
Carlsbad, Ca 92011

**Re: YUCAIPA VALLEY WATER DISTRICT BRINELINE PROJECT**

The Soboba Band of Luiseño Indians appreciates your observance of Tribal Cultural Resources and their preservation in your project. The information provided to us on said project has been assessed through our Cultural Resource Department, where it was concluded that although it is outside the existing reservation, the project area does fall within the bounds of our Tribal Traditional Use Areas. This project location is in close proximity to other known sites and is a shared use area that was used in ongoing trade between the Luiseno and Cahuilla tribes. Therefore it is regarded as highly sensitive to the people of Soboba.

Soboba Band of Luiseño Indians is requesting the following:

1. **Government to government** consultation under SB-18. Including the transfer of information to the Soboba Band of Luiseno Indians regarding the progress of this project should be done as soon as new developments occur.
2. The Soboba Band of Luiseño Indians is regarded as the lead consulting tribal entity for this project.
3. Working in and around traditional use areas intensifies the possibility of encountering cultural resources during the construction/excavation phase. For this reason the Soboba Band of Luiseño Indians requests that Native American Monitor(s) from the Soboba Band of Luiseño Indians Cultural Resource Department to be present during any ground disturbing proceedings. Including surveys and archaeological testing.
4. At this time the Soboba Band does see a direct need for a Native American **Monitor** due to the high cultural significance of the area and is asking that the monitor be compensated for his/her time.
5. Request that proper procedures be taken and requests of the Tribe be honored (Please see the attachment)

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph Ontiveros", is written over a horizontal line. The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

Joseph Ontiveros  
Director  
Soboba Cultural Resource Department  
Cell Phone: 951.663.5279

## Soboba Cultural Resource Department

P.O. Box 487 San Jacinto, Ca 92581

Phone: 951.654.5544 ext. 4137



**Cultural Items (Artifacts).** Ceremonial items and items of cultural patrimony reflect traditional religious beliefs and practices of the Soboba Band. The Developer should agree to return all Native American ceremonial items and items of cultural patrimony that may be found on the project site to the Soboba Band for appropriate treatment. In addition, the Soboba Band requests the return of all other cultural items (artifacts) that are recovered during the course of archaeological investigations. Where appropriate and agreed upon in advance, Developer's archeologist may conduct analyses of certain artifact classes if required by CEQA, Section 106 of NHPA, the mitigation measures or conditions of approval for the Project. This may include but is not limited or restricted to include shell, bone, ceramic, stone or other artifacts.

The Developer should waive any and all claims to ownership of Native American ceremonial and cultural artifacts that may be found on the Project site. Upon completion of authorized and mandatory archeological analysis, the Developer should return said artifacts to the Soboba Band within a reasonable time period agreed to by the Parties and not to exceed (30) days from the initial recovery of the items.

**Treatment and Disposition of Remains.** Given that Native American human remains have been found during development of the Project and the Soboba Band has been designated the MLD, the following provisions shall apply to the Parties:

- A. The Soboba Band shall be allowed, under California Public Resources Code § 5097.98 (a), to (1) inspect the site of the discovery and (2) make determinations as to how the human remains and grave goods shall be treated and disposed of with appropriate dignity.
- B. The Soboba Band, as MLD, shall complete its inspection within twenty-four (24) hours of receiving notification from either the Developer or the NAHC, as required by California Public Resources Code § 5097.98 (a). The Parties agree to discuss in good faith what constitutes "appropriate dignity" as that term is used in the applicable statutes.
- C. Reburial of human remains shall be accomplished in compliance with the California Public Resources Code § 5097.98 (a) and (b). The Soboba Band, as the MLD in consultation with the Developer, shall make the final discretionary determination regarding the appropriate disposition and treatment of human remains.
- D. All parties are aware that the Soboba Band may wish to rebury the human remains and associated ceremonial and cultural items (artifacts) on or near, the site of their discovery, in an area that shall not be subject to future subsurface

## Soboba Cultural Resource Department

P.O. Box 487 San Jacinto, Ca 92581

Phone: 951.654.5544 ext. 4137



disturbances. The Developer should accommodate on-site reburial in a location mutually agreed upon by the Parties.

E. The term "human remains" encompasses more than human bones because the Soboba Band's traditions periodically necessitated the ceremonial burning of human remains. Grave goods are those artifacts associated with any human remains. These items, and other funerary remnants and their ashes are to be treated in the same manner as human bone fragments or bones that remain intact

**Coordination with County Coroner's Office.** The Lead Agencies and the Developer should immediately contact both the Coroner and the Soboba Band in the event that any human remains are discovered during implementation of the Project. If the Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, the Coroner shall ensure that notification is provided to the NAHC within twenty-four (24) hours of the determination, as required by California Health and Safety Code § 7050.5 (c).

**Non-Disclosure of Location Reburials.** It is understood by all parties that unless otherwise required by law, the site of any reburial of Native American human remains or cultural artifacts shall not be disclosed and shall not be governed by public disclosure requirements of the California Public Records Act. The Coroner, parties, and Lead Agencies, will be asked to withhold public disclosure information related to such reburial, pursuant to the specific exemption set forth in California Government Code § 6254 (r).

Ceremonial items and items of cultural patrimony reflect traditional religious beliefs and practices of the Soboba Band. The Developer agrees to return all Native American ceremonial items and items of cultural patrimony that may be found on the project site to the Soboba Band for appropriate treatment. In addition, the Soboba Band requests the return of all other cultural items (artifacts) that are recovered during the course of archaeological investigations. Where appropriate and agreed upon in advance, Developer's archeologist may conduct analyses of certain artifact classes if required by CEQA, Section 106 of NHPA, the mitigation measures or conditions of approval for the Project. This may include but is not limited or restricted to include shell, bone, ceramic, stone or other artifacts.



April 17, 2009

Mr. Kamarul Muri  
Project Manager/Biologist  
Dudek  
605 Third Street  
Encinitas, California 92024

Re: Addendum Records Searches and Survey Results for the Yucaipa Valley Water District  
Brineline Project

Dear Mr. Muri:

This letter report documents the results of cultural resources records searches and a pedestrian survey conducted by ASM Affiliates, Inc. (ASM) for the Yucaipa Valley Water District Brineline Project in San Bernardino County, California (Figures 1 and 2). These studies were carried out to comply with the California Environmental Quality Act (CEQA) and also with federal laws pertaining to cultural resources, specifically Section 106 of the National Historic Preservation Act. The report represents a consolidation and revision of previous letter reports prepared for the project (Akyüz 2007; Andrews 2009; Iversen 2007). It has also been revised in response to comments on the project's Mitigated Negative Declaration that were received from the State Water Resource Control Board (Jones 2009).

### Management Summary

The Yucaipa Valley Water District proposes to extend the existing Santa Ana Regional Interceptor (SARI) pipeline into Yucaipa Valley, in order to dispose of waste brine and excess non-reclaimable wastewater (Figures 3 through 6). The project area is located in areas shown on the USGS 7.5-minute Redlands, San Bernardino South, and Yucaipa quadrangles. The proposed project would extend the existing SARI pipeline by approximately 14 mi. (23 km) from San Bernardino through San Timoteo and Live Oak canyons to the Wochholz Regional Water Recycling Facility (WRWRF) in Yucaipa. The proposed project would install a reverse-osmosis treatment system within the existing developed footprint of the WRWRF. The reverse-osmosis facilities would be enclosed in a premanufactured building with a footprint measuring approximately 80 by 225 ft. (24 x 69 m).

Record searches for the project were conducted at the San Bernardino Archaeological Information Center (SBAIC) and the Eastern Information Center (EIC) of the California Historical Resources Information System on March 29, September 12, and September 17, 2007, and November 11, 2008. These searches identified a total of 113 previously recorded

cultural resources within 1/8 mi. (200 m) of the successive iterations of the project area. As the project is currently defined, 59 resources fall within the 1/8-mi. (200-m) study corridor. Seven of them fall within the alignment proper. A pedestrian survey of three unpaved portions of the brineline alignment did not identify any additional cultural resources.

## Methods

The records searches at the SBAIC and EIC addressed areas within 1/8 mi. (200 m) of the proposed project alignment. Resources identified included prehistoric archaeological sites and historic sites and features, including properties listed on or eligible for the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), California Historical Landmarks, and California Points of Historical Interest. Also identified were previous cultural resources reports addressing portions of the records search area.

Dudek sent a letter to the Native American Heritage Commission (NAHC) on March 30, 2009, requesting information concerning Native American tribes and individuals affiliated with the project area. The NAHC replied on April 13, 2009, indicating that its Sacred Lands File search did not indicate the presence of Native American cultural resources within 0.5 mi. (0.8 km) of the project area, and providing a list of 12 local Native American contacts. ASM sent contact letters to these individuals and several others on April 13-14, 2009.

ASM Senior Archaeologist Sherri Andrews and ASM Associate Archaeologist Linda Akyüz performed a field survey of unpaved portions of the project alignment on December 16, 2008. Three portions of the alignment were surveyed:

- Wochholz Wastewater Treatment Plant (WWTP) to Live Oak Canyon Road. This segment, approximately 3,300 ft. (1,000 m) in length, runs between the west end of the wastewater treatment plant along an existing Yucaipa Valley Water District easement to Live Oak Canyon Road (Figure 7). The easement runs along open land at the base of the foothills and then follows a shallow drainage that cuts across some fields and through a former chicken ranch. The entire area has been heavily modified by agricultural or road use. The surveyors were escorted by Bob Hines of the WWTP, because the chicken ranch is a private property.
- San Timoteo Canyon Road to California Street. This segment, approximately 8,000 ft. (2,400 m) in length, runs along the San Bernardino County Flood Control District (SBCFCD) dirt service road that flanks the southwest side of San Timoteo Creek between California Street to the north and San Timoteo Canyon Road to the south (Figure 8). The roadway has been very heavily modified by construction and maintenance of the flood control channel and utility lines. The majority of the road has been graded to a level below the natural ground surface, and so any potential for cultural resources has been destroyed. Access to the road was gained by permit from the SBCFCD.

- Van Leuven Street to East Caroline Street. This segment, approximately 4,000 ft. (1,200 m) in length, runs west within the Van Leuven Street right-of-way parallel to the Union Pacific Railroad tracks, then north along the western edge of a cultivated field to the extension of East Caroline Street (Figure 9). The entire area has been very heavily modified by construction of the railroad, the use of the private property, fence installation, and the current use of the segment adjacent the cultivated field as an access road. Access was open and could be gained from both the east and north ends of the segment.

## Findings

The various records searches identified 113 cultural resources within 1/8 mi. (200 m) of successive iterations of the project alignment. Within the study corridor for the currently proposed project alignment, 59 cultural resources were identified (Table 1). These included four resources listed in or determined eligible for the NRHP and/or CRHR, three listed as California Historical Landmarks, and three listed as California Points of Historical Interest. Seven of the resources fall within the project alignment, and 32 are adjacent to it. A confidential map showing the locations of resources within or adjacent to the proposed project alignment is being provided to Dudek but is not attached to this document.

Table 1. Record Search Results for Cultural Resources within One-Eighth Mile of the Current Proposed Project Alignment

Designation	Other Designation	USGS Quad*	Site Type	Relation to Alignment	Eligibility / Comment
RIV-3972	Sauvedras House	Redlands	House	Outside	Unknown
SBR-573H	--	Redlands	Historic Scatter	Outside	Unknown
SBR-574H	--	Redlands	Railroad Related Trash Scatter	Adjacent	Likely destroyed by railroad maintenance
SBR-647H	--	SBS	Railroad Related Trash Scatter	Adjacent	Likely destroyed by railroad maintenance
SBR-912	--	Yucaipa	Lithic Scatter	Adjacent	Not eligible
SBR-2311/H	Guachama Rancheria	Redlands	Protohistoric Camp/ Historic Rancheria	Adjacent	CHL-95 (only monument remains)
SBR-2999/H	Jumuba Rancho; Fort Benson	SBS	Protohistoric Camp/ Historic Rancheria	Adjacent	CHL-617 (only monument remains)
SBR-6169H	--	Redlands	Trash Scatter	Outside	Unknown
SBR-6172H	Brookside-Vache Winery	Redlands	Historic Winery	Adjacent	Eligible
SBR-6173H	Bryn Mawr Townsite	Redlands	Town Site	Adjacent	Destroyed; area developed here
SBR-6174H	--	Redlands	Bridge	Within	Unknown
SBR-6856H	--	Redlands	Orchard / Farm Complex	Adjacent	Unknown
SBR-7168H	Gage Canal	SBS	Water Conveyance System	Within	Unknown
SBR-8092H	Mill Creek Zanja	Redlands	Water Conveyance System	Outside	CHL-4; NRHP-L-77-329; Engineering Landmark 21

Designation	Other Designation	USGS Quad*	Site Type	Relation to Alignment	Eligibility / Comment
SBR-10330H; RIV-6381H	Union Pacific Railroad	Redlands, SBS	Railroad	Within	Unknown
SBR-10565H	Frink Adobe	Redlands	Residence	Adjacent	CPHI-SBR-28; eligible
SBR-10877H	--	Redlands	Foundation	Adjacent	Unknown
SBR-10866H	--	Redlands	Historic Foundation	Adjacent	Unknown
SBR-11263H	Hinckley Ranch	Redlands	Foundation; Building Debris	Adjacent	Unknown; likely destroyed
SBR-11287H	--	Redlands	Trash Scatter	Adjacent	Was within SBR-6173H; likely destroyed
SBR-11854	--	Redlands	Protohistoric Hearth	Outside	Unknown
SBR-012365	--	Redlands	Dairy	Adjacent	Listed on local register
36-012242	--	SBS	Commercial Building	Outside	Not eligible
36-012365	Van Uffelen House and Dairy	Redlands	Dairy	Adjacent	Not eligible; eligible as contributing to local proposed district
36-012617	--	Yucaipa	Orchard	Outside	Not eligible
36-012871	--	Redlands	Residence	Outside	Not eligible
36-012872	--	Redlands	Residence	Outside	Not eligible
36-012873	--	Redlands	Residence	Outside	Not eligible
36-012874	--	Redlands	Residence	Outside	Not eligible
36-013888	--	Redlands	Residence	Adjacent	Unknown
36-013889	--	Redlands	Residence	Adjacent	Unknown
36-013891	--	Redlands	Residence	Adjacent	Unknown
36-016417	San Bernardino-Sonora Road	Redlands, SBS	Historic Trail Alignment	Within	CPHI-SBR-21; likely destroyed, area developed
36-016640	White House	Redlands	Residence	Adjacent	Listed in NRHP
36-017259	--	Redlands	Chinese Bunkhouse	Adjacent	Eligible
36-017533	Mound City	Redlands	Town Site	Adjacent	CPHI-SBR-19; Loma Linda Hospital here now
P1063-12	San Timoteo Canyon Dump	Redlands	Dump	Outside	Unknown
P1063-14	Hinckley Ranch	Redlands	Windmill	Outside	Unknown
P1063-23	--	Redlands	Structure on Historic Map	Adjacent	Destroyed
P1063-24	--	Redlands	Structure on Historic Map	Adjacent	Destroyed
P1063-25H	--	Redlands	House	Adjacent	Unknown
P1063-26H	--	Redlands	Structure on Historic Map	Adjacent	Destroyed
P1063-27	--	Redlands	Structure on Historic Map	Adjacent	Destroyed
P1063-28	--	Redlands	Structure on Historic Map	Adjacent	Destroyed
P1063-31	--	Redlands	Structure on Historic Map	Adjacent	Destroyed
P1063-35H	Dinky Railway; Van Uffelen Dairy Barn	Redlands	Railway / Barn	Outside	Unknown
P1063-42H	Van Leuven Property	Redlands	House	Adjacent	Unknown
P1063-56H	Lower Yucaipa Ditch	Redlands	Water Conveyance System	Within	Unknown
P1063-58H	--	Redlands	Railroad School	Adjacent	Unknown
P1064-31H	--	Yucaipa	Residence	Outside	Unknown

Designation	Other Designation	USGS Quad*	Site Type	Relation to Alignment	Eligibility / Comment
P1064-34H	--	Yucaipa	Homestead	Outside	Unknown
P1064-35H	--	Yucaipa	Industrial	Outside	Unknown
P1074-84H	Hunt and Cooley Ditch	SBS	Water Conveyance System	Within	Unknown
P1074-85H	Camp Carleton Ditch	SBS	Water Conveyance System	Within	Unknown
P1074-86H	Jansen Ditch	SBS	Water Conveyance System	Adjacent	Unknown
P1074-89H	Rice-Thorn Ditch	SBS	Water Conveyance System	Adjacent	Unknown
P1074-90H	Johnson Swamp Ditch	SBS	Water Conveyance System	Outside	Unknown
P11377H	--	Redlands	Residence	Outside	Unknown
10951 Evans St., Loma Linda	--	SBS	Residence	Outside	Not eligible

\* SBS = San Bernardino South

The field survey of the unpaved portions of the proposed project alignment revealed that all of the areas had been very heavily modified. The survey did not result in the identification of any cultural resources in the areas investigated.

### Management Considerations

Only cultural resources that lie within the alignment are likely to be impacted by the project. Staging locations along the alignment have not been specified, but it is assumed that they will be within the 30-ft.-wide (9-m) construction corridor along the alignment. At the Santa Ana River, potential staging areas for the directional drilling operation have been specified (Figure 6).

Seven cultural resources have been recorded within the project alignment (Table 2). All of these resources are historic-period transportation or water-conveyance features; none are archaeological sites. The resources include:

- SBR-6174H, a metal bridge. The bridge crosses San Timoteo Creek above the location where the pipeline will be laid, and it will not be affected by the project.
- SBR-7168H, Gage Canal. The mapped location of which in the project alignment has been very heavily disturbed and modified. There is no current surface evidence of a ditch in this location. No further consideration of this feature in connection with the current project appears to be warranted.
- SBR-10330H / RIV-6381H, Union Pacific Railroad. If project constraints do not allow for avoidance of this feature, historical evaluation of it may be required.
- P-36-016417, San Bernardino-Sonora Road, a California Point of Historical Interest. Virtually the entire area across which this route ran has been developed, so there does not appear to be any extant evidence of this alignment.

- P1063-56H, Lower Yucaipa Ditch. If project constraints do not allow for avoidance of this feature, historical evaluation of it may be required.
- P1074-84H, Hunt and Cooley Ditch. If project constraints do not allow for avoidance of this feature, historical evaluation of it may be required.
- P1074-85H, Camp Carleton Ditch. This evidently followed the route of South Waterman Avenue, so any evidence of the system in this area is likely destroyed.

**Table 2. Cultural Resources within the Proposed Project Alignment**

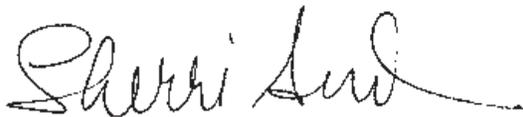
Cultural Resource	Recommended Project Measures
SBR-6174H	None
SBR-7168H	None
SBR-10330H / RIV-6381H	Avoid effects, or evaluate eligibility
P-36-016417	None
P1063-56H	Avoid effects, or evaluate eligibility
P1074-84H	Avoid effects, or evaluate eligibility
P1074-85H	None

If project plans are modified to involve impacts to areas beyond the currently proposed alignment, further measures to identify, avoid impacts to, and evaluate cultural resources may be required.

Although archaeological surveys have addressed the majority of the project alignment, much of the eastern end of the alignment and the Santa Ana River floodplain in the western end of the alignment in particular have not undergone recent survey and could contain heretofore unrecognized cultural resources. (However, in the floodplain itself, the pipeline will be constructed using trenchless methods, such as micro-tunneling or jack and bore.) Such resources may also be present under roadbeds. Therefore, ASM recommends that a qualified archaeologist monitor ground-disturbing project activities.

Should you have any questions or concerns, please do not hesitate to contact me.

Sincerely,



Sherri Andrews, M.A., RPA  
Senior Archaeologist

## References Cited

Akyüz, Linda

- 2007 Records Search Summary for the Yucaipa Brineline Phase II Project, Riverside and San Bernardino Counties, California. Letter submitted to Dudek, October 15, 2007. ASM Affiliates, Carlsbad, California.

Andrews, Sherri

- 2009 Records Search and Survey Results for the Yucaipa Valley Water District Brineline Project. Letter submitted to Dudek, January 8, 2009. ASM Affiliates, Carlsbad, California.

Iversen, David R.

- 2007 Records Search Results for the Yucaipa Valley Water District Brineline Project. Letter submitted to Dudek, May 10, 2007. ASM Affiliates, Carlsbad, California.

Jones, Michelle L.

- 2009 Letter addressing "Mitigated Negative Declaration (MND) for Yucaipa Valley Water District (District), Yucaipa Valley Regional Brineline Extension Project (Project), San Bernardino and Riverside Counties, State Clearinghouse No. 200902110," send to the to Yucaipa Valley Water District on March 23, 2009. State Water Resources Control Board, Sacramento, California.

## Attachments:

Figure 1. Regional map.

Figure 2. Project vicinity map.

Figure 3. Project map –eastern (Phase 1) portion.

Figure 4. Project map – central (Phase 2) portion.

Figure 5. Project map – western (Phase 3) portion.

Figure 6. Project map – detail of western (Phase 3 directional drilling) portion

Figure 7. Archaeological survey map - Wochholz Wastewater Treatment Plant(WWTP) to Live Oak Canyon Road segment.

Figure 8. Archaeological survey map - San Timoteo Canyon Road to California Street segment.

Figure 9. Archaeological survey map - Van Leuven Street to East Caroline Street segment.

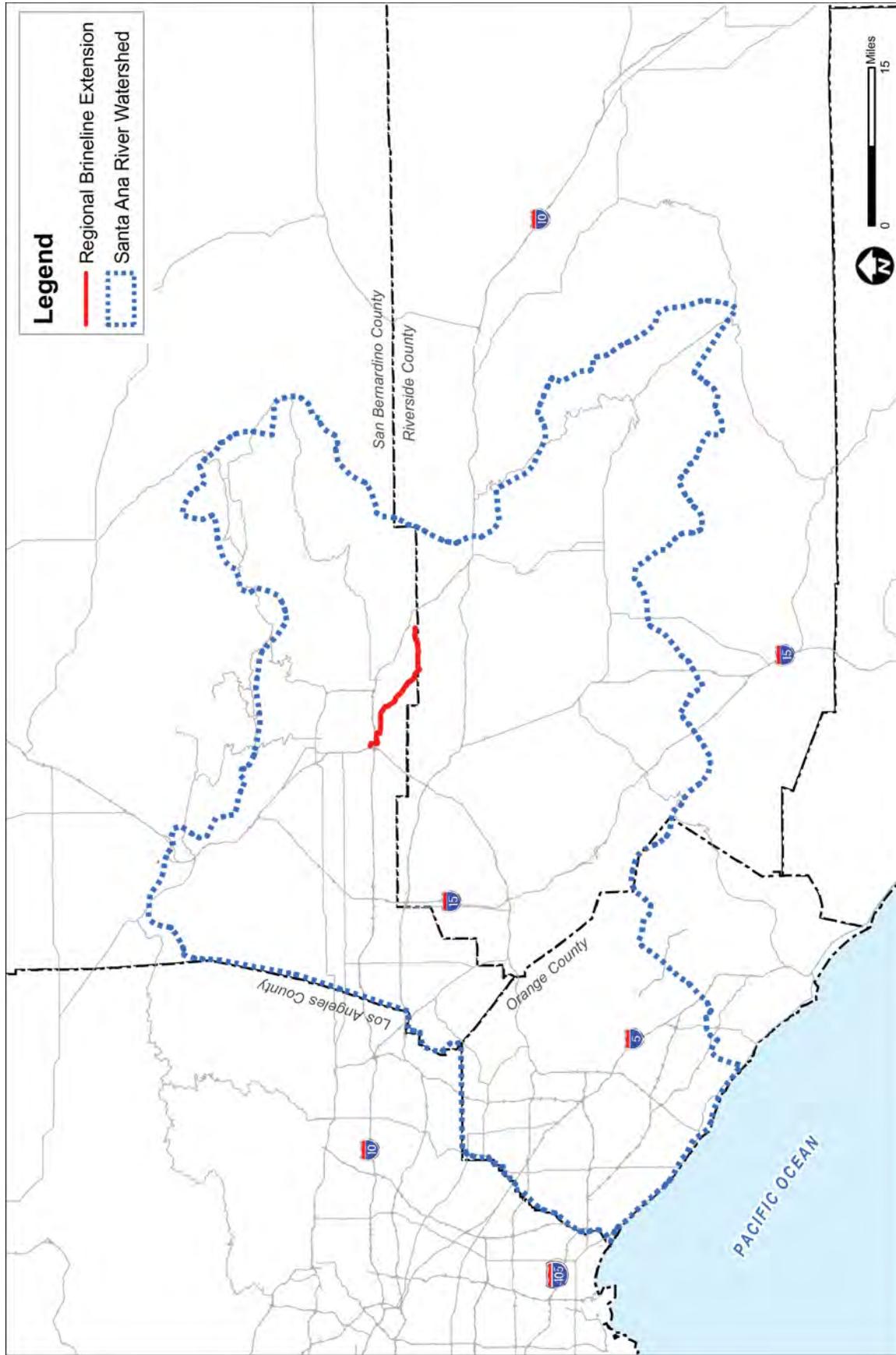


Figure 1. Regional map.

January 8, 2009  
Mr. Kamarul Muri  
Page 9 of 16

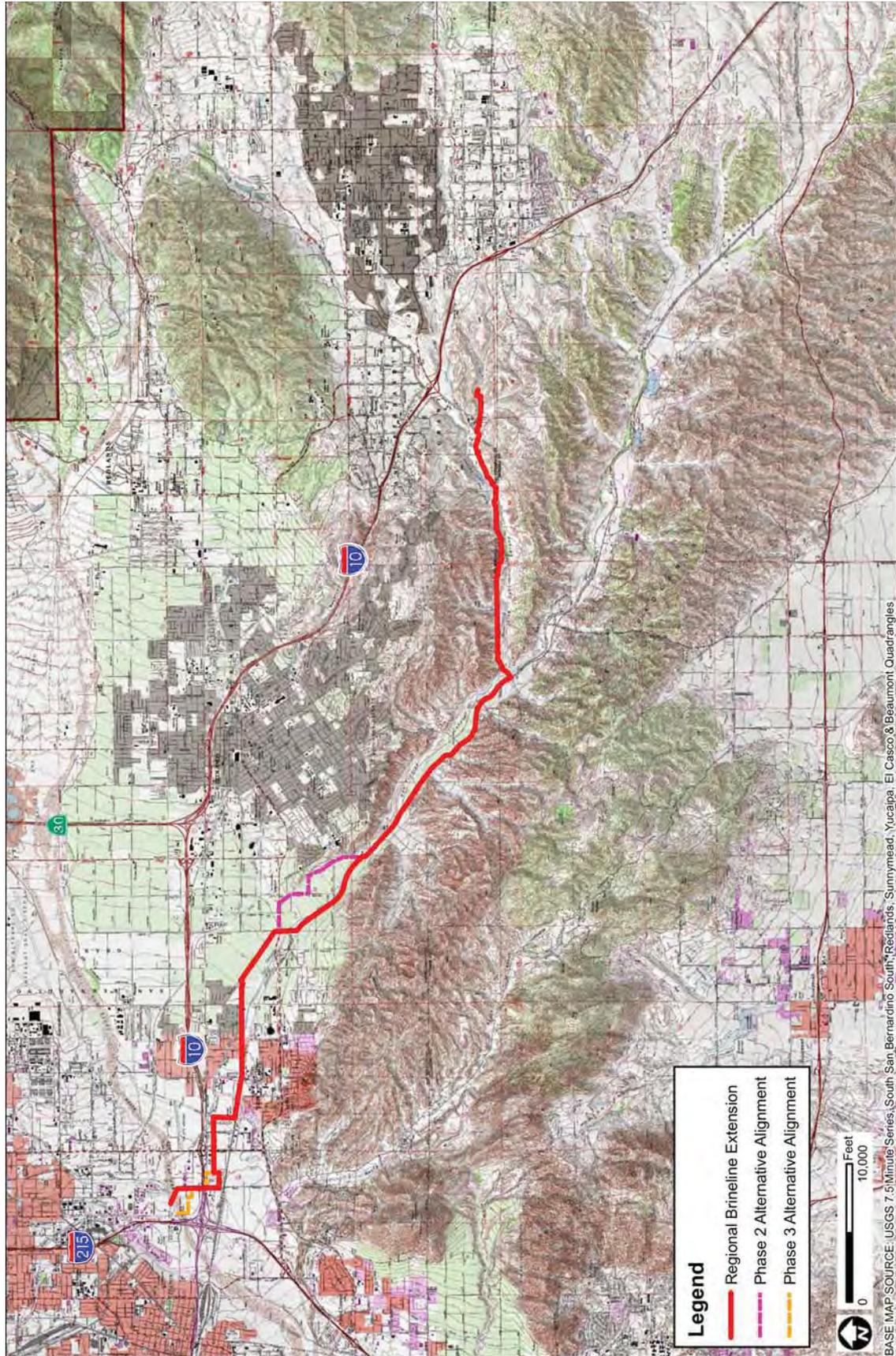


Figure 2. Project location overview.

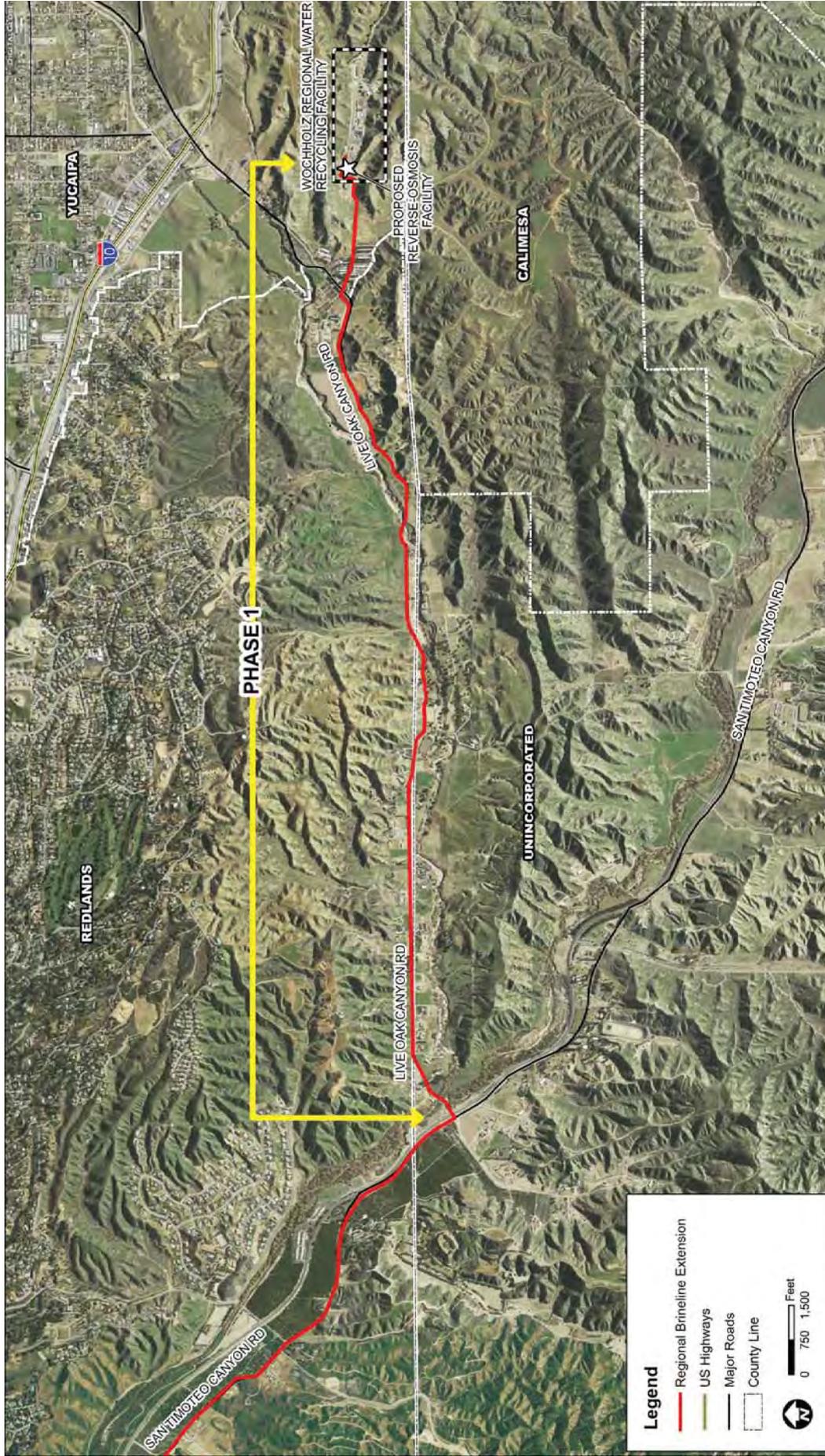


Figure 3. Project map –eastern (Phase 1) portion.

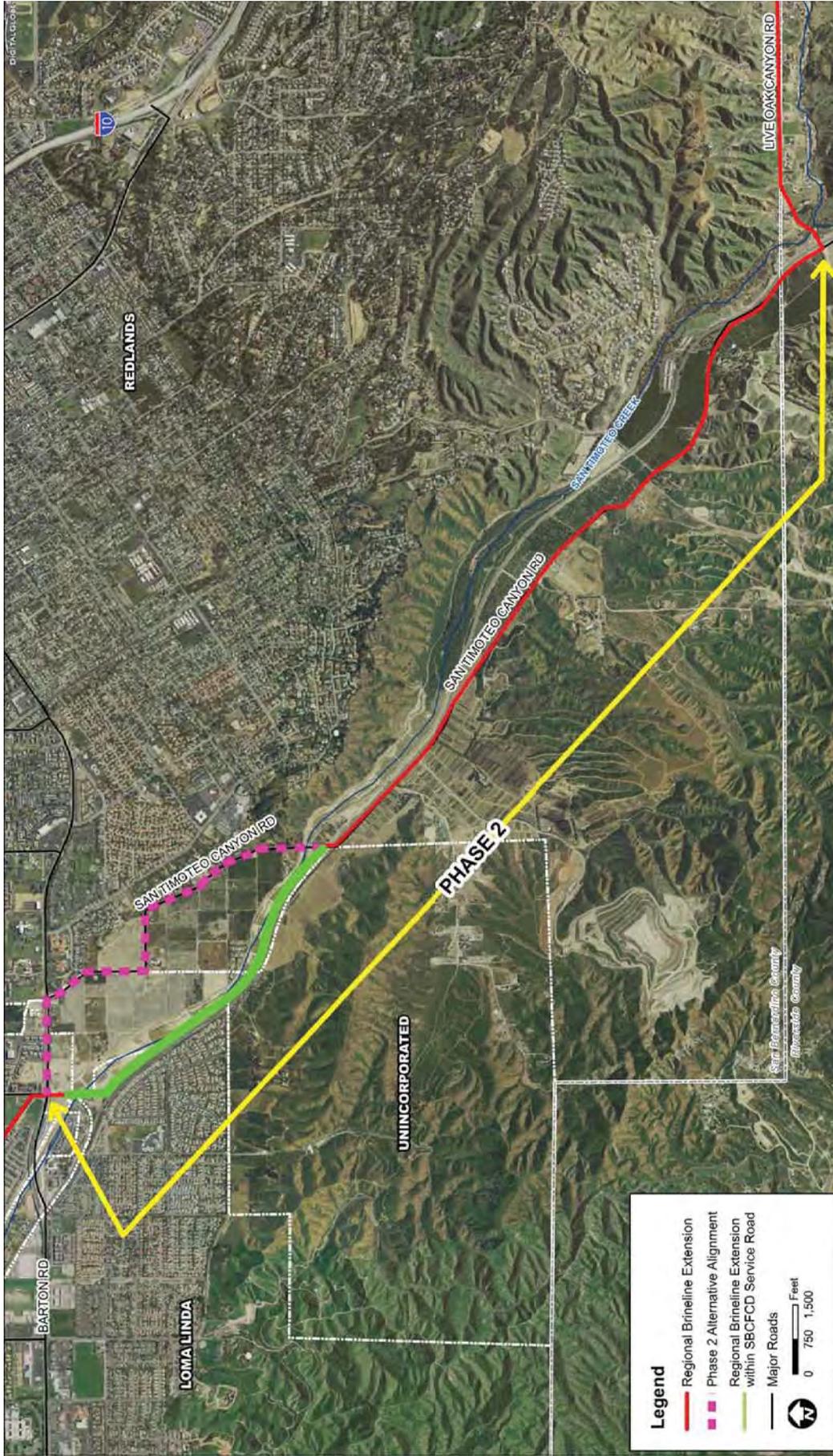


Figure 4. Project map – central (Phase 2) portion.

January 8, 2009  
Mr. Kamarul Muri  
Page 12 of 16

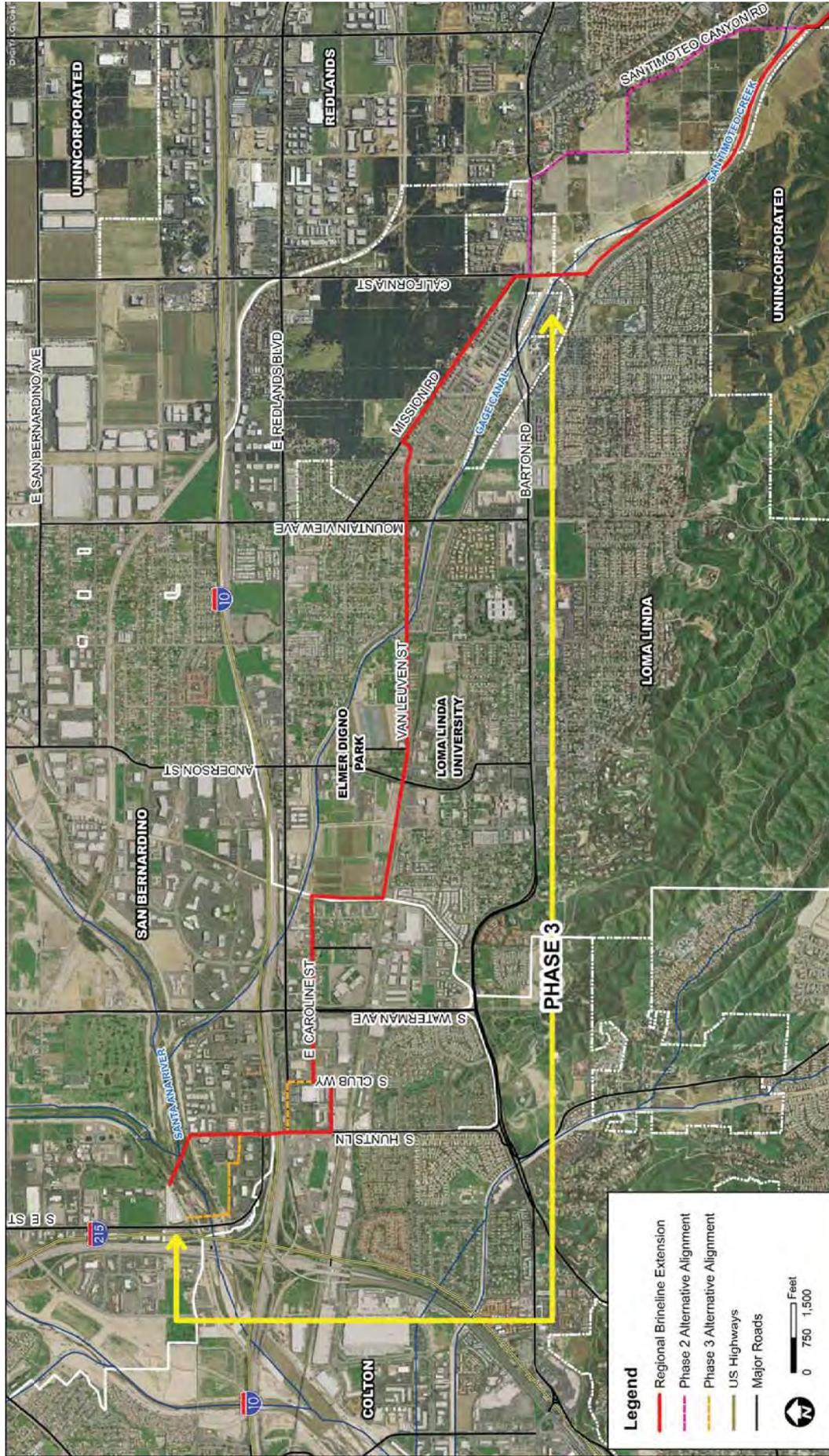


Figure 5. Project map - western (Phase 3) portion.

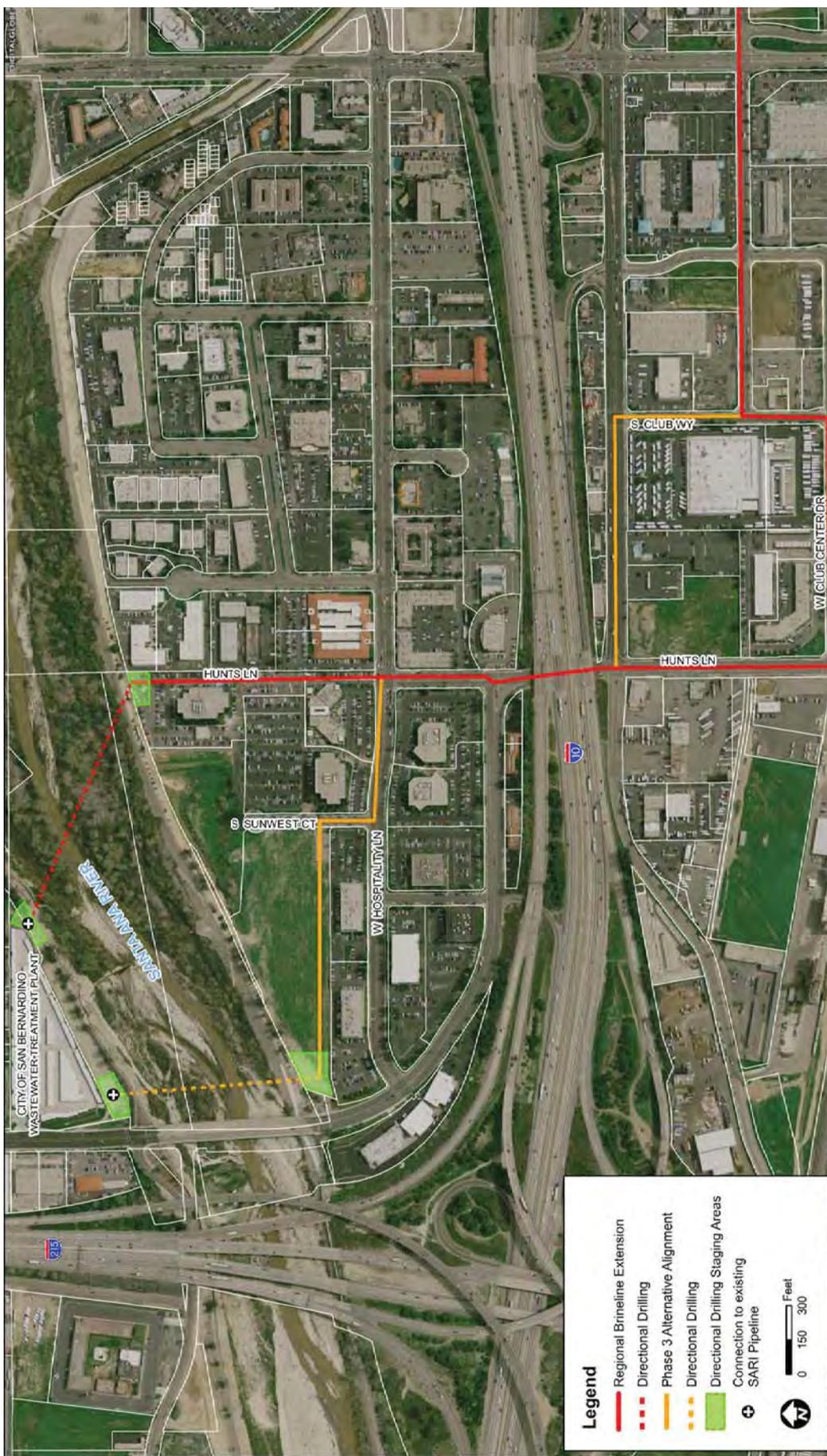


Figure 6. Project map – detail of western (Phase 3 directional drilling) portion



January 8, 2009  
Mr. Kamarul Muri  
Page 15 of 16

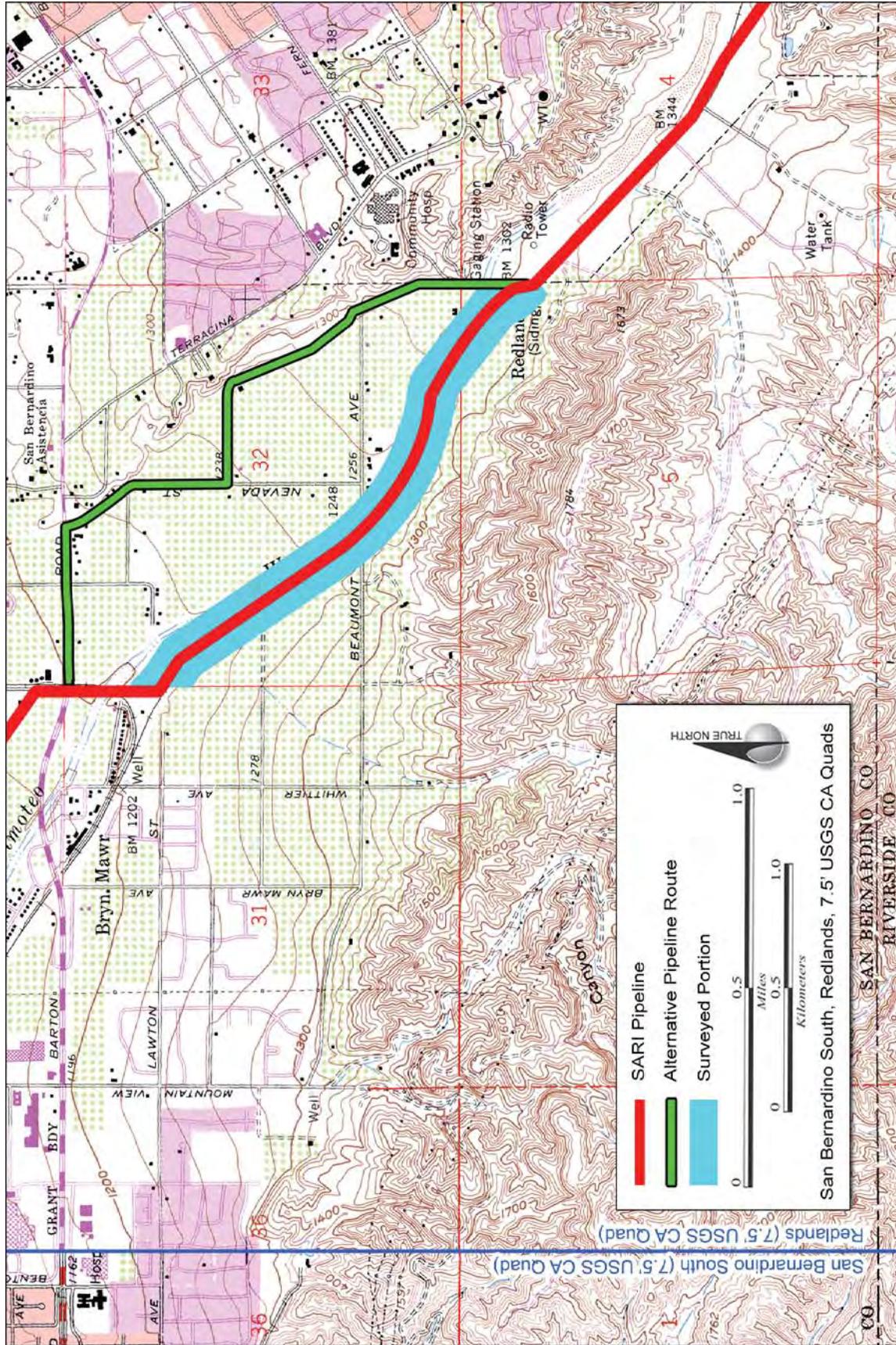


Figure 8. Archaeological survey map - San Timoteo Canyon Road to California Street segment.

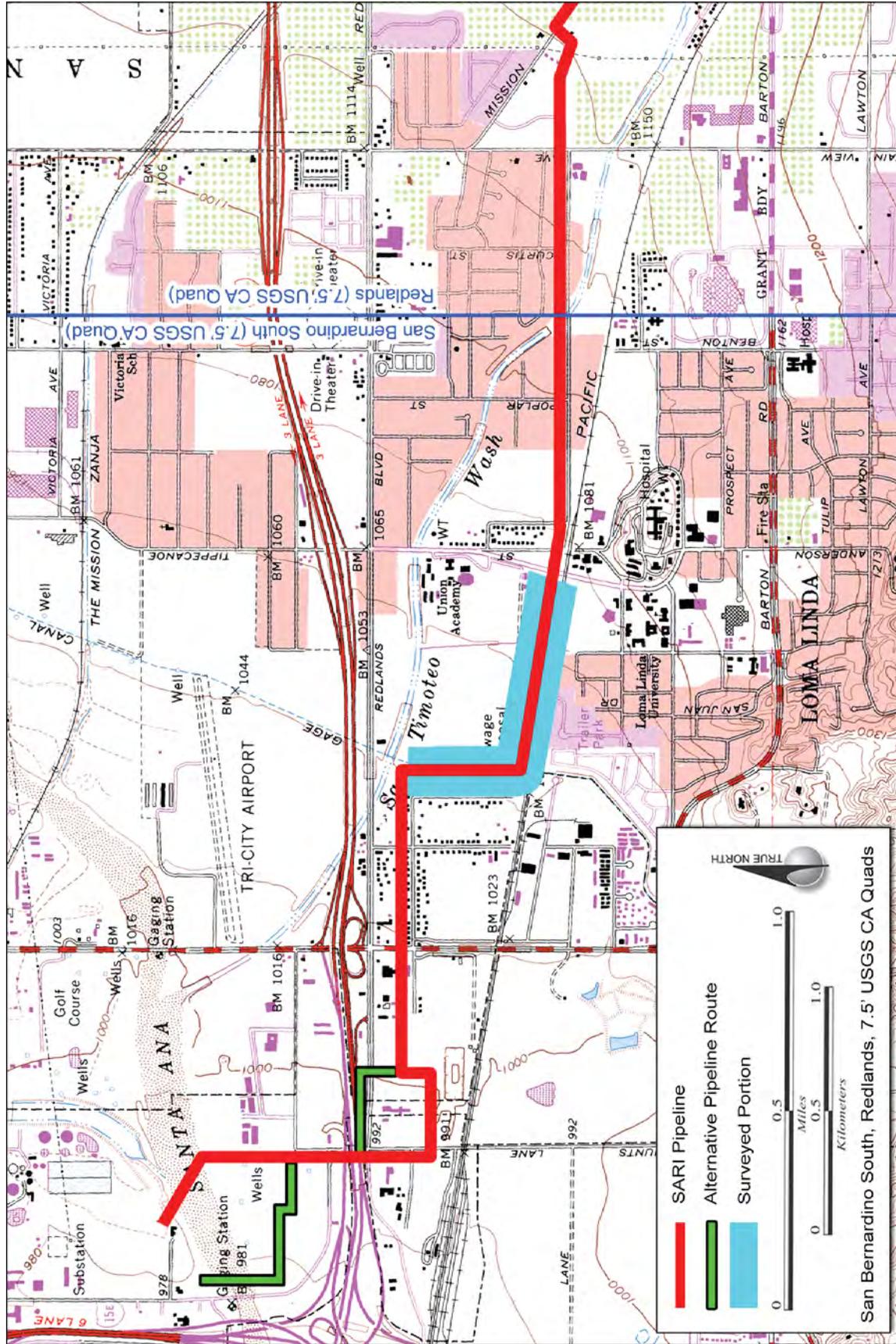


Figure 9. Archaeological survey map - Van Leuven Street to East Caroline Street segment.

**APPENDIX D**

**AIR EMISSIONS MODELING OUTPUTS**



### Road Construction Emissions Model, Version 6.3.1

Emission Estimates for -> Brineline Extension Project											
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	3.2	16.9	24.4	51.4	51.4	1.4	50.0	11.7	1.3	10.4	2,774.5
Grading/Excavation	3.2	16.9	24.4	51.4	51.4	1.4	50.0	11.7	1.3	10.4	2,774.5
Drainage/Utilities/Sub-Grade	3.2	16.9	24.4	51.4	51.4	1.4	50.0	11.7	1.3	10.4	2,774.5
Paving	2.9	9.6	17.0	1.5	1.5	1.5	-	1.4	1.4	-	1,373.9
Maximum (pounds/day)	3.2	16.9	24.4	51.4	51.4	1.5	50.0	11.7	1.4	10.4	2,774.5
Total (tons/construction project)	0.4	2.1	3.1	5.8	5.8	0.2	5.6	1.3	0.2	1.2	341.7

Notes: Project Start Year -> 2010  
 Project Length (months) -> 12  
 Total Project Area (acres) -> 20  
 Maximum Area Disturbed/Day (acres) -> 5  
 Total Soil Imported/Exported (yd<sup>3</sup>/day) -> 0  
 PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Brineline Extension Project											
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	1.5	7.7	11.1	23.4	23.4	0.6	22.7	5.3	0.6	4.7	1,281.2
Grading/Excavation	1.5	7.7	11.1	23.4	23.4	0.6	22.7	5.3	0.6	4.7	1,281.2
Drainage/Utilities/Sub-Grade	1.5	7.7	11.1	23.4	23.4	0.6	22.7	5.3	0.6	4.7	1,281.2
Paving	1.3	4.4	7.7	0.7	0.7	0.7	-	0.6	0.6	-	624.5
Maximum (kilograms/day)	1.5	7.7	11.1	23.4	23.4	0.7	22.7	5.3	0.6	4.7	1,281.2
Total (megagrams/construction project)	0.4	1.9	2.8	5.3	5.3	0.2	5.1	1.2	0.2	1.1	310.0

Notes: Project Start Year -> 2010  
 Project Length (months) -> 12  
 Total Project Area (hectares) -> 8  
 Maximum Area Disturbed/Day (hectares) -> 2  
 Total Soil Imported/Exported (meters<sup>3</sup>/day) -> 0  
 PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

**Road Construction Emissions Model  
Data Entry Worksheet**

Version 6.3.1



Input Type	Brineline Extension Project
Project Name	2010
Construction Start Year	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1 New Road Construction
Project Construction Time	2 Road Widening
Predominant Soil/Site Type: Enter 1, 2, or 3	3 Bridge/Overpass Construction
Project Length	12.0 months
Total Project Area	1 Sand Gravel
Maximum Area Disturbed/Day	2 Weathered Rock-Earth
Water Trucks Used?	3 Blasted Rock
Soil Imported	14 miles
Soil Exported	20.4 acres
Average Truck Capacity	5.0 acres
	1 Yes
	2 No
	yd <sup>3</sup> /day
	yd <sup>3</sup> /day
	yd <sup>3</sup> (assume 20 ft unknown)
	20.0

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Months	% Time
1.2	10
4.8	40
4.2	35
1.8	15

The remaining sections of this sheet contain areas that can be modified by the user, although these modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months
Grubbing/Land Clearing	1.20	1.20
Grading/Excavation	4.80	4.80
Drainage/Utilities/Sub-Grade	4.20	4.20
Paving	1.80	1.80
Totals	0.00	12.00

Hauling emission default values can be overridden in cells C45 through C48.

**Soil Hauling Emissions**

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip	30	30
Round trips/day	0	0
Vehicle miles traveled/day (calculated)	0	0

Hauling Emissions	ROG	NOX	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	1.11	14.47	7.75	0.56	0.48	1855.42
Emission rate (grams/trip)	11.78	8.19	205.93	0.02	0.01	223.55
Pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
Tons per construction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

**Worker Commute Emissions**

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values
Miles/one-way trip	10.00	20
One-way trips/day		2
No. of employees, Grubbing/Land Clearing		1

2008	2009	2010
0.00	0.00	1.20
0.00	0.00	4.80
0.00	0.00	4.20
0.00	0.00	1.80

30	0	0
----	---	---

10	2	1.25
----	---	------

No. of employees: Grading/Excavation	3					
No. of employees: Drainage/Utilities/Sub-Grade	3					
No. of employees: Paving	5					
	ROG	NOX	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.169	0.294	2.971	0.034	0.019	426.400
Emission rate - Grading/Excavation (grams/mile)	0.169	0.294	2.971	0.034	0.019	426.400
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.169	0.294	2.971	0.034	0.019	426.400
Emission rate - Paving (grams/mile)	0.169	0.294	2.971	0.034	0.019	426.400
Emission rate - Grubbing/Land Clearing (grams/trip)	0.963	0.402	9.269	0.120	0.012	191.400
Emission rate - Grading/Excavation (grams/trip)	0.963	0.402	9.269	0.120	0.012	191.400
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.963	0.402	9.269	0.120	0.012	191.400
Emission rate - Paving (grams/trip)	0.963	0.402	9.269	0.120	0.012	191.400
Pounds per day - Grubbing/Land Clearing	0.020	0.021	0.266	0.003	0.001	25.588
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.004	0.000	0.000	0.338
Pounds per day - Grading/Excavation	0.020	0.021	0.266	0.003	0.001	25.588
Tons per const. Period - Grading/Excavation	0.001	0.001	0.014	0.000	0.000	1.351
Pounds per day - Draining/Utilities/Sub-Grade	0.020	0.021	0.266	0.003	0.001	25.588
Tons per const. Period - Drain/Util/Sub-Grade	0.001	0.001	0.012	0.000	0.000	1.182
Pounds per day - Paving	0.048	0.021	0.266	0.003	0.001	96.029
Tons per const. Period - Paving	0.001	0.000	0.005	0.000	0.000	1.901
Tons per construction period	0.069	0.003	0.035	0.000	0.000	4.772

Water truck default values can be overridden in cells C61 through C63 and E61 through E63

	User Override of Default # Water Trucks		Program Estimate of Number of Water Trucks		User Override of Truck Miles Traveled/Day		Default Values Miles Traveled/Day	
	Default	Override	Program	Estimate	Truck Miles	Traveled/Day	Default	Values
Grubbing/Land Clearing - Exhaust	2.00	1	1	10.00	40	40	20	20
Grading/Excavation - Exhaust	2.00	1	1	10.00	40	40	20	20
Drainage/Utilities/Subgrade	2.00	1	1	10.00	40	40	20	20
	ROG	NOX	CO	PM10	PM2.5	CO2		
Emission rate - Grubbing/Land Clearing (grams/mile)	1.11	14.47	7.75	0.56	0.48	1855.42		
Emission rate - Grading/Excavation (grams/mile)	1.11	14.47	7.75	0.56	0.48	1855.42		
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	1.10	14.47	7.75	0.56	0.48	1855.42		
Pounds per day - Grubbing/Land Clearing	0.65	0.64	0.84	0.02	0.02	81.74		
Tons per const. Period - Grub/Land Clear	0.00	0.03	0.02	0.00	0.00	4.32		
Pounds per day - Grading/Excavation	0.05	0.64	0.84	0.02	0.02	81.74		
Tons per const. Period - Grading/Excavation	0.00	0.03	0.02	0.00	0.00	4.32		
Pounds per day - Draining/Utilities/Subgrade	0.05	0.64	0.84	0.02	0.02	81.74		
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.03	0.02	0.00	0.00	3.78		

Fugitive dust default values can be overridden in cells C110 through C112.

	User Override of Max Acres/Day		Default Maximum Acres/Day		Default PM10 tons/day		Default PM2.5 tons/day	
	Default	Override	Maximum	Acres/Day	PM10	PM2.5	PM10	PM2.5
Fugitive Dust - Grubbing/Land Clearing	5	5	50.0	0.7	10.4	0.1	3	3
Fugitive Dust - Grading/Excavation	5	5	50.0	2.8	10.4	0.5	3	3
Fugitive Dust - Drainage/Utilities/Subgrade	5	5	50.0	2.3	10.4	0.5	3	3

**Off-Road Equipment Emissions**

Grubbing/Land Clearing Override of Default	Number of Vehicles Program-estimate	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
0.00	0.00	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
2.00	2.00	Excavators	1.43	6.54	10.89	0.65	0.60	1094.72
0.00	0.00	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Graders	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Pavers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
2.00	2.00	Rubber Tired Loaders	1.28	5.46	9.95	0.57	0.53	917.73
0.00	0.00	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Signal Beards	0.00	0.00	0.00	0.00	0.00	0.00
28	28	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
2.00	2.00	Tractors/Loaders/Backhoes	0.43	4.30	2.88	0.14	0.13	654.76
0.00	0.00	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Welders	0.00	0.00	0.00	0.00	0.00	0.00
		Grubbing/Land Clearing	3.1	16.3	23.7	1.4	1.3	2687.2
		Grubbing/Land Clearing	0.0	0.2	0.3	0.0	0.0	35.2

Grading/Excavation Override of Default	Number of Vehicles Program-estimate	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
0.00	0.00	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
2.00	2.00	Excavators	1.43	6.54	10.89	0.65	0.60	1094.72
0.00	0.00	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Graders	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Pavers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00





Signal Boards	20	0.78	8	125.8
Skid Steer Loaders	44	0.55	8	193.0
Surfacing Equipment	362	0.45	8	1302.8
Sweepers/Scrubbers	91	0.68	8	495.8
Tractor/Loaders/Backhoes	108	0.55	8	475.1
Trenchers	63	0.75	8	376.6
Welders	45	0.45	8	163.6

0

END OF DATA ENTRY SHEET